

Shared Regulatory Services

Communicable Disease and Health Service Plan

2018/19



Shared
Regulatory
Services



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Introduction

Local Authorities have a responsibility to provide comprehensive health protection service to businesses, residents and visitors of Bridgend, Cardiff and the Vale of Glamorgan. This is largely achieved through the investigation of cases and outbreaks of communicable disease and the application of control, preventative and enforcement measures together with a number of other proactive activities. This Service Plan is produced to inform the business community and wider audience of the arrangements Bridgend, Cardiff and the Vale of Glamorgan has in place to discharge this duty.

This Service Plan contains the arrangements, supporting structures and controls that enable interventions to be delivered, together with an action plan to fulfil our major purpose of protecting and improving the health of people across the region.

Christina Hill
Operational Manager Commercial Services

1. Service Aims and Objectives

1.1 Primary aims

The Communicable Disease Service is committed to protecting individuals from harm, preventing communicable disease and promoting health improvement and to demonstrate this; the service has adopted the following aims and objectives.

The overall aim of the service is:-

The protection and improvement of the health of the people of Bridgend, Cardiff and the Vale of Glamorgan

To achieve this, the service has adopted the following key delivery priorities:-

- The timely investigation, surveillance, control, and prevention of sporadic and outbreak cases of communicable disease, including the development and implementation of related public health intervention strategies.
- The enforcement of Health Protection legislation to minimise the spread of communicable disease and contamination from radiation and chemicals that threaten health.
- The provision of infection control and nutritional training.
- Leading and supporting the work of council services and external organisations including local communities and industry to protect and minimise the impact of public health risks to the population of Bridgend, Cardiff and the Vale of Glamorgan.
- In line with Cardiff's Healthy City status undertake targeted health promotion and intervention activities by acting upon the social, economic, environmental and biological determinants of health and wellbeing.

1.2 Links to Corporate Objectives and local plans

As a regional organisation providing regulatory services across three local authority areas, we place the **corporate priorities** and outcomes of the three councils at the heart of all that we do (Appendix A). In developing our own strategic priorities and outcomes for Shared Regulatory Services, we have considered the priorities of all the three authorities, together with the needs and aspirations of our partners and customers so they translate into priorities that meet local needs.

SRS priorities



SRS outcomes

Improving health and wellbeing	Safeguarding the vulnerable	Protecting the environment
<ul style="list-style-type: none"> • The food chain is safe and free from risks; • Risks in the workplace are managed properly; • Noise and air emissions are controlled; • A safe trading environment is maintained; • Licensed premises operate responsibly; • The quality of private rented property is improved; • Infectious disease is controlled and prevented. 	<ul style="list-style-type: none"> • Children are protected from harmful substances and products; • Older and vulnerable people are protected from rogue traders and scams; • Illegal money lending activities are prevented • Taxi provision is safe and fair. 	<ul style="list-style-type: none"> • The environment is protected from harmful emissions to land, air and water; • People will use energy efficient buildings and products • Communities are protected from nuisance and are safer • Resources are used sustainably.
	Supporting the local economy	Maximising the use of resources
	<ul style="list-style-type: none"> • A fair trading environment is maintained; • Informed and confident consumers; • Improved business practices and operation; • Accessible services responsive to business needs. 	<ul style="list-style-type: none"> • SRS operates effectively and efficiently across all 3 areas; • Public and stakeholders are able to access our services; • Income generation underpins sustainable service delivery; • Staff are effective in their roles.

Improving health and wellbeing. Amongst other factors impacting health, the service works with others to protect public health by controlling and preventing sporadic cases and outbreaks of communicable disease contributing to the reduction in ill health in people.

Supporting the local economy. The provision of timely advice and engagement on health and infection control issues to businesses, stakeholders, and other local authorities and bodies can benefit the economic viability of businesses. The equitable enforcement of regulations helps to maintain a level playing field, allowing businesses to compete on equal terms.

Safeguarding the vulnerable Much of the reactive surveillance work forms the foundation for proactive evidence based interventions focused on vulnerable and ‘at risk’ sectors of our community. This work routinely involves working in partnership with the business community, Public Health Wales, voluntary organisations and supporting other Council services such as Schools.

Nationally the service also contributes to the **Welsh National Enforcement Priorities for Wales** for local regulatory delivery which highlight the positive contribution that regulatory services, together with local and national partners, can make in delivering better outcomes:-

- Protecting individuals from harm and promoting health improvement
- Ensuring the safety and quality of the food chain to minimise risk to human and animal health
- Promoting a fair and just environment for citizens and business
- Improving the local environment to positively influence quality of life and promote sustainability.

The Local Public Health Plan 2018/19 published as part of the Local Public Health Strategic Framework provides details of how local Public Health teams work in partnership to improve and protect the health and well-being of the local population. The Plan sets out several priority work areas and actions necessary to achieve improvement. Priority areas include:-

- Tobacco
- Obesity
- Sexual health
- Health at work
- Immunisation
- Alcohol
- Falls prevention
- **Health protection**
- Healthcare public health

The Communicable Disease Service contributes to the ‘Health Protection’ priority work area by working towards a reduction in the incidence and impact of infectious disease.

2. Overview of the Service

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2.1 Area profile

Shared Regulatory Services covers the Council areas of Bridgend, Cardiff and the Vale of Glamorgan and serves over 600,000 residents. Extending from St Mellons in the East of Cardiff to Maesteg in the west, the area encompasses Cardiff, the capital City of Wales with its array of cultural, financial and commercial organisations and the rural areas of Bridgend and the Vale of Glamorgan with their vibrant tourist and agricultural economies.



Bridgend is situated on the south coast straddling the M4 corridor. It comprises an area of 28,500 hectares and a population of just over 140,000 residents. To the north of the M4, the area consists of mainly ex-coal mining valley communities with Maesteg as the main centre of population. To the south of the M4, the ex-market town of Bridgend is the largest town, the hub of the economy and its employment base. To the south west on the coast lies Porthcawl, a traditional seaside resort, a traditional seaside resort with a high proportion of elderly residents, which is subject to a major influx of tourists during the summer period.



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Cardiff is the capital city of Wales and is continuing to grow faster than any other capital city in Europe. In population terms, it is the largest city in Wales with a population of 360,000. Measures of population however, belies Cardiff's significance as a regional trading and business centre. The population swells by approximately 70,000 daily with commuters and visitors. Cardiff is the seat of government and the commercial, financial and administrative centre of Wales. Cardiff boasts one of the most vibrant city centres in the UK and on a typical weekend, Cardiff's night time economy can attract over 40,000 people and sometimes more than 100,000 when the City's Millennium Stadium hosts international events.



The Vale of Glamorgan is bounded to the north by the M4 motorway and to the south by the Severn Estuary. It covers 33,097 hectares with 53 kilometres of coastline, and a population of over 130,000 residents. The area is predominantly rural in character, but contains several urban areas of note such as Barry, Penarth, Dinas Powys and the historic towns of Cowbridge and Llantwit Major. Barry is the largest town, a key employment area and popular seaside resort. The rural parts of the Vale provide a strong agricultural base together with a quality environment, which is a key part of the area's attraction. The area includes Barry Docks area and Cardiff International Airport.



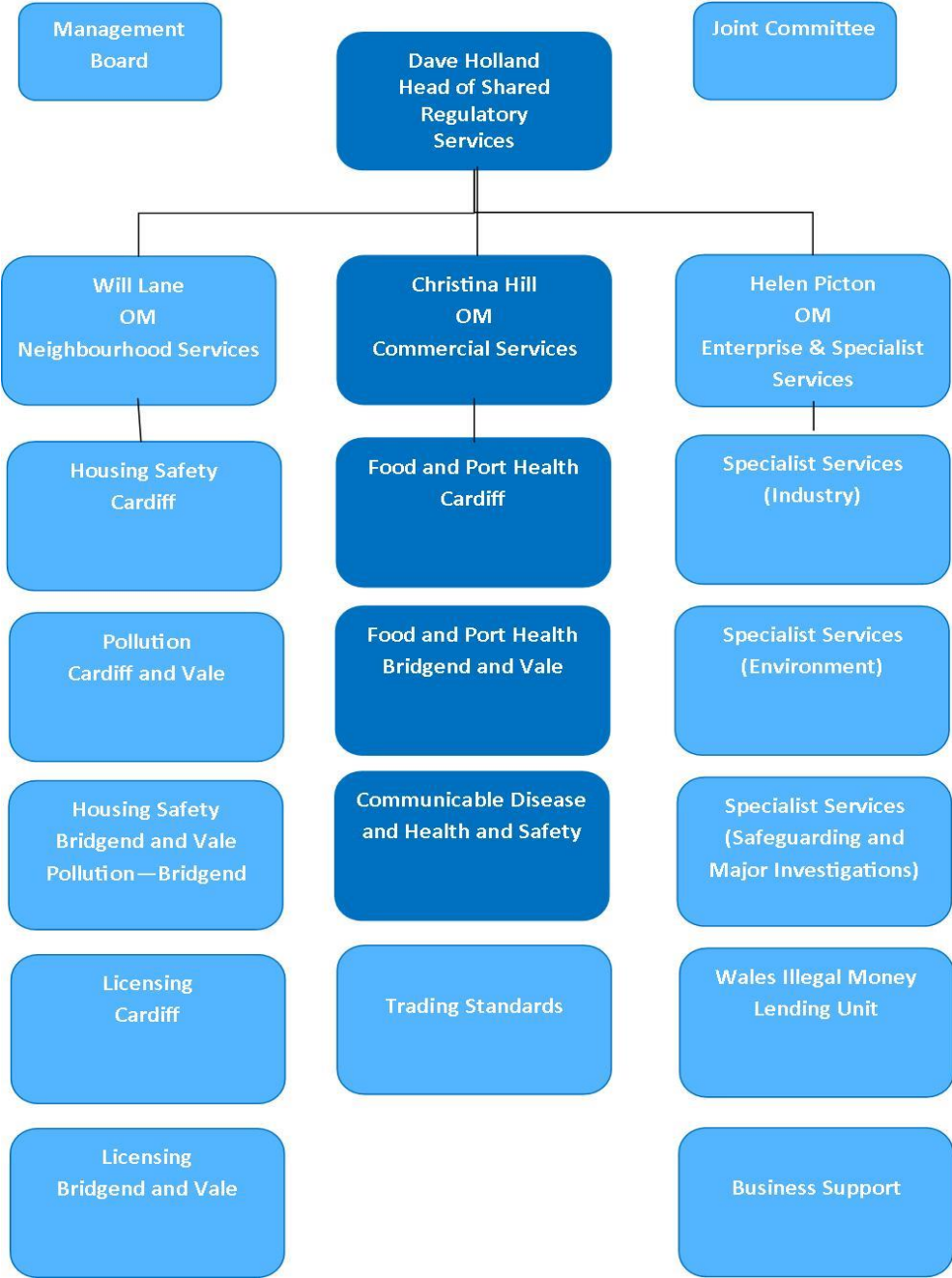
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2.2 Organisational Structure

Communicable Disease Services are provided by the Commercial Services Team within Shared Regulatory Services. The Teams consists largely of Environmental Health Officers providing services across the three local authority areas. The Vale of Glamorgan Council act as the host authority for the Service with functions associated with this Plan delegated to the Shared Service Joint Committee.

Operational functions within the Service are illustrated in the following table with those that have responsibility for public health issues highlighted in darker blue.

Shared Regulatory Services Organisational Chart



2.3 Scope of the Communicable Disease Service

A comprehensive health protection and improvement service is delivered by combining surveillance, public health intervention, epidemiological studies, enforcement, advice, training and promotion. Much of the reactive surveillance work forms the foundation for proactive evidence based interventions focused on vulnerable and 'at risk' sectors of our community in particular young people and the elderly. Recent work includes the Infection Control workshops in educational settings and residential care home (an initiative which has been extended for a further year). The success of this work is based on partnership working and business and community engagement.

Outbreak and cluster investigations make up a significant part of our reactive role, as a result all investigations are reviewed as part of a lesson learning exercise and for example improvements may be made to service delivery or a proactive intervention may be applied. The Service often leads nationally on aspects of communicable disease and health protection, for example managing infections in residential care homes (in partnership with Welsh Government) and the promotion of infection control in invasive beauty treatments, in readiness for the 'Special Procedures' Licensing requirement of the recent Public Health (Wales) Act 2017.

The Key services delivered are:

- The investigation of confirmed sporadic and outbreak cases of communicable disease and all actions required as a result of those investigations;
- Responding to complaints of suspected food poisoning and infectious disease risks
- Enforcement of Health Protection legislation including the service of 'Requests for Cooperation', the application for Part 2A Orders and exclusion of infected cases or close contacts from place of work, education or leisure activities.
- Leading on local and national communicable disease initiatives, which involves proactive business engagement and partnership working commonly Public Health Wales, Business Wales, Welsh Government and other Council services such as education and corporate health and safety.
- Provide health promotion and public health intervention activities including production of training materials such as the Cryptosporidium video, and production of the 'Before you Ink – Think' video, a safe tattooing initiative. This initiative will be extended to invasive beauty therapy practices this year.
- Management and delivery of infection control and nutritional training.
- Coordination of student and work placement training.

Service delivery points

Communicable Disease Services are delivered primarily from County Hall, Cardiff with the Vale and Bridgend Hubs utilised as the service demands. The Service generally operates office hours from Mondays to Fridays. Outside of office hours the service operates a 24 hour emergency service which involves the immediate investigation and control of communicable diseases of public health significance such as E. Coli O157, Typhoid and Legionnaires'

disease. In addition, officers frequently conduct investigations at other hours as required for the timely investigation and control of communicable disease.

The Shared Regulatory Services website provides information on the services provided and the website address is www.srs.wales/

2.4 Resources

Financial allocation

The expenditure directly involved in providing the Communicable Disease Service for 2018/19 is included in the Service budget and is considered adequate to ensure the effective delivery of the service.

Staffing allocation The table below indicates the actual number of staff working on Communicable Disease Control and related matters (in terms of full time equivalents FTE).

Position	Function	FTE
Head of Shared Regulatory Services	Management of Shared Regulatory Service.	0.05
Operational Manager Regulatory Commercial Services x 1	Management of Commercial Services	0.10
Team Manager Communicable Disease and Health and Safety x 1	Management and delivery of the Communicable Disease Service.	0.50
Lead Officer for Communicable Disease x 2	All aspects of communicable disease investigation, enforcement, control and prevention.	1.8
Commercial Services Technical Officer (Communicable Disease) x 2	All aspects of communicable disease investigation and enforcement	1.60

2.5 Staff Development and Competency

This is now the third year of the Shared Regulatory Service across three distinct areas, together with the implementation of a new structure and new ways of working have now been embedded in the team but will continue to evolve over the next year. Shared Regulatory Service's approach to managing this is through the development of a Workforce Development Plan that provides a plan for developing the workforce to ensure the right mix of experience, knowledge and skills required to fulfil our goals and to ensure we get the right number of the right people in the right place at the right time.

The Workforce Development Plan will provide a framework that addresses wide ranging issues and bring together the following areas:-

- Developing organisational culture
- Leadership and management development
- Skills development

- Recruitment, retention and progression
- Communication and employee engagement
- Employee performance management

Workforce development will also be enhanced through regular performance reviews which require line managers with their staff to identify personal objectives and assess training needs for staff.

Professional Development (CPD) is actively encouraged and officers will be offered the opportunities to attend a wide range of training courses, seminars, meetings and briefings to help maintain competency and improve technical, legal and administrative knowledge. The foundation of professional development in the communicable disease specialism is the National Communicable Disease Lead Officer Training Programme funded by Welsh Government and which the Team actively participates. This programme is supported by the Welsh CIEH Six Pack and Public Health Wales training events.

As well as this comprehensive programme the officers within the Communicable Disease and Health and Safety Team also have access to the technical support and expertise of the local CCDC (Consultant in Communicable Disease Control) and Health Protection Team as well as attendance at regional and national Task Groups and internal training and review at staff team meetings.

The Regulators Development Needs Analysis (RDNA) tool assists the Council in identifying training and developmental needs of Inspectors and a revised competency led approach to authorisation of health and safety inspectors has been implemented. In addition the Service ensures that competency is secured by appointing appropriately qualified and experienced personnel to health and safety enforcement duties. There are specific job descriptions and person specifications for all employees of Shared Regulatory Services and all appointments are made in accordance with the procedures for recruitment and selection.

2.6 Challenges for the year ahead

Financial

Developing the new Service: The Communicable Disease and Health and Safety Team continue to develop this financial year and promote their services within the three authorities to encourage partnership working. This approach facilitates clear benefits for business, staff and stakeholders which is proven to reduce burdens on local businesses by reducing the number of visits and improving advice and support services and harmonising regulatory controls between the regulatory functions. There are also opportunities to enhance and extend the technical capabilities of staff, provide improved access for all partners to new and/or scarce skills and very importantly an opportunity to allow the collaborative authorities to achieve required budget savings. In 2018/19 focus continued to be placed on vulnerable groups particularly educational and care settings which are the most common environments for gastrointestinal outbreaks.

Challenges presented by rare, emerging and re-emerging pathogens: The Team continues to be presented either nationally or locally with challenges presented by

rare or emerging pathogens. In 2017/2018 the team investigated increased incidence of indigenous Lyme Disease, Hepatitis A and sporadic cases of cholera, listeria and legionella. The MDR TB (multi-drug resistant TB) case continues to require resources to manage and effectively protect public health. The management of this case relies on partnership working with Public Health Wales, the Courts and the local health board and will continue this year. To date, two Part 2A Orders have been executed to assure protection of public health.

On all occasions these challenges have been met but it is worthy to note that their investigation and control often require an increased level of time and resource. This is because each pathogen will have specific characteristics relating to its persistence within the environment, its source and modes of transmission together with its perception of risk within the community. These factors can often be complex, require detailed knowledge and good partnership working to ensure containment and where possible eradication of the source or at best contributory factors.

Challenges presented by the introduction of molecular diagnostics in Public Health Laboratories. The introduction of this more sensitive and efficient form of microbiological testing to some Welsh laboratories begins as a staged approach from the end of May 2018. Public Health Wales have engaged with local authorities regarding the implications and the estimates of increased workload. Experiences of other areas that have implemented these changes report a varied impact but there are concerns regarding a potential 50% increase in campylobacter cases and 100-500% of giardia cases. It is currently an unknown situation and local authorities are being guided by the expertise of Public Health Wales who are monitoring the changes and drafting standard operating procedures for some pathogens of public health significance such as STEC (Shiga toxin producing Escherichia coli) This will affect all 3 local authorities in Shared Regulatory Services and the Communicable Disease Team are currently working with partners in readiness for it's introduction.

Introduction of Tarian, National Surveillance Database – Update:

Tarian was launched in May 2017 and reported as a challenge in last year's business plan. Tarian was developed for the mutual benefit and use of all local authorities in Wales and Public Health Wales. It is the primary tool for the collation of data for surveillance purposes, case management, reporting requirements and outbreak / incident control. This database was welcomed by all users and whilst there have been issues regarding its use, effective liaison of all partners has resolved the key issues and a quality assurance system supports its continual review to assure that it is fit for purpose.

Cardiff's City Status: Cardiff is the capital city of Wales and the largest Local Authority in Wales, with a population of 360,000 which swells by approximately 70,000 daily with commuters and visitors. Its popularity as a shopping and leisure destination extends across Europe and as far afield as New Zealand, Australia and Japan. This status presents a range of public health risks whose control and prevention is the responsibility of the Communicable Disease Team in partnership with Public Health Wales. The risks vary in terms of complexity, significance and resource application.

2.7 Action Plan 2018/19

The following action plan is evidence based and has been developed for 2018/19 and outlines how through reactive and proactive work the Service will:

1. Improve health and well being
2. Safeguard the vulnerable
3. Support the local economy and
4. Maximise the use of resources

In addition the Communicable Disease Service contributes to the Section 18 Health and Safety Enforcement Plan and the Food Law Enforcement Plan, details of this contribution are contained within those documents.

Communicable Disease Action Plan 2018/19	
Relevant Strategic Priorities	Objective
1, 2, 3, 4	Investigate and control sporadic and outbreak notifications of communicable disease and undertake public health interventions to prevent increased incidence of illness and minimise onward transmission
1, 2, 3, 4	<p>Q1 Secure approval of the Communicable Disease Business Plan from Public Protection Committee 2018/19</p> <p>In partnership with Welsh Government and local Industry organise and deliver 'Managing Infections in Residential Care Homes' Workshops to support the maintenance of infection control standards and compliance with Legionella Codes of Practice.</p> <p>Undertake timely investigations of sporadic and outbreak cases of communicable disease and apply appropriate control and preventive measures</p>
1, 2, 3	<p>Q2 Undertake timely investigations of sporadic and outbreak cases of communicable disease and apply appropriate control and preventive measures.</p> <p>Promote and raise awareness of the requirements of the forthcoming licensing scheme outlined in Part 4 of the Public Health (Wales) Act 2017 amongst tattooists, body piercers and beauty therapists</p>
1, 2, 3, 4	<p>Q3 Undertake timely investigations of sporadic and outbreak cases of communicable disease and apply appropriate control and preventive measures</p> <p>Continue to support businesses and legacy authorities with infection control training and advice during outbreaks.</p> <p>Promote and raise awareness of the requirements of the forthcoming licensing scheme outlined in Part 4 of the Public Health (Wales) Act 2017 amongst tattooists, body piercers and beauty therapists.</p>
1, 2, 3	<p>Q4 Undertake timely investigations of sporadic and outbreak cases of communicable disease and apply appropriate control and preventive measures</p> <p>Continue to support businesses and legacy authorities with infection control training and advice during outbreaks.</p> <p>Promote and raise awareness of the requirements of the forthcoming licensing scheme outlined in Part 4 of the Public Health (Wales) Act 2017 amongst tattooists, body piercers and beauty therapists</p>
1, 2	
1, 2, 3, 4	

3. Service Delivery and Performance 2017/18

3.1 Introduction

The new SRS structure has now been fully implemented and all inconsistencies in reporting and investigating of sporadic and outbreaks cases of communicable disease in 2015/16 have now been addressed. This has included the harmonisation of procedures supported by staff training. The positive impact of this in Bridgend and the Vale of Glamorgan is particularly evident.

The Communicable Disease Service is supported by an active surveillance system managed through a national database known as Tarian utilised by all Welsh authorities and Public Health Wales and is based on notification data received from laboratories, GPs and members of the public. All information obtained during the course of sporadic and outbreak investigations are stored here. Tarian replaced IBID in May 2017 and its use by all interested parties facilitates effective communication between stakeholders, supports effective case management and early detection of outbreaks and enables identification of unusual disease trends.

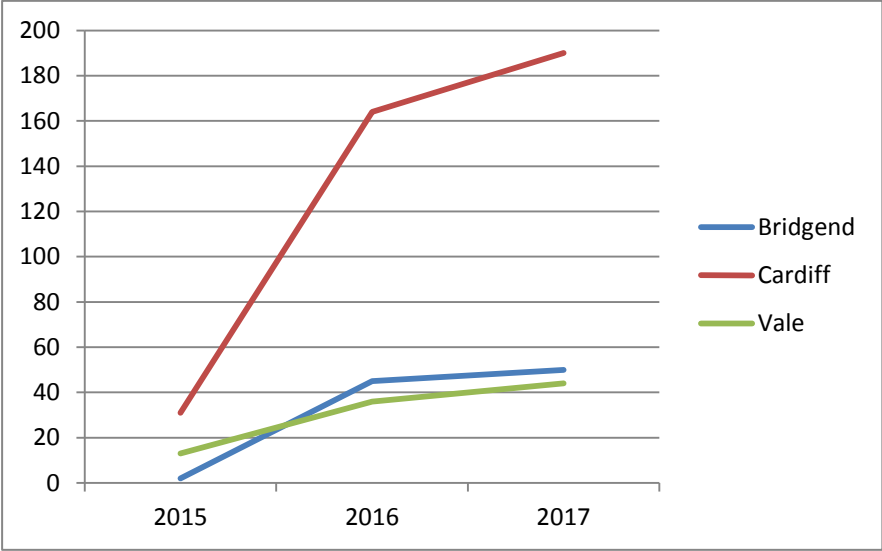
In 2017, SRS was notified of 1354 cases of communicable disease of which 1,070 (79%) were laboratory confirmed the remaining 21% (284) were unconfirmed cases (suspected cases of food poisoning). This compares to 2016: 1,281 communicable diseases cases of which 1,036 (81%) were confirmed. The figures below provide more detail:

	Notified CD Cases (¹ CFP)	Unconfirmed CD cases	Total CD cases
• Bridgend	211 (193)	50	261
• Cardiff	607 (502)	190	797
• Vale	252 (216)	44	296
• TOTAL	1070 (911)	284	1354

The noticeable trend over the last 3 years continues to be the increase in notifications and thus investigation of unconfirmed cases of communicable disease (Graph 1). Whilst the investigation of confirmed cases are prioritised above suspected cases, resource is given to the initial response which includes signposting to their GP, infection control advice and encouraging faecal sample submission where the evidence indicates that food poisoning is likely. This approach supports early outbreak detection. In the main suspected cases are members of the public who think they have suffered food poisoning, in general the majority are viral gastro enteritis most likely to have been acquired through person to person or environmental transmission. The majority are observed in the winter months when norovirus is more prevalent within the community.

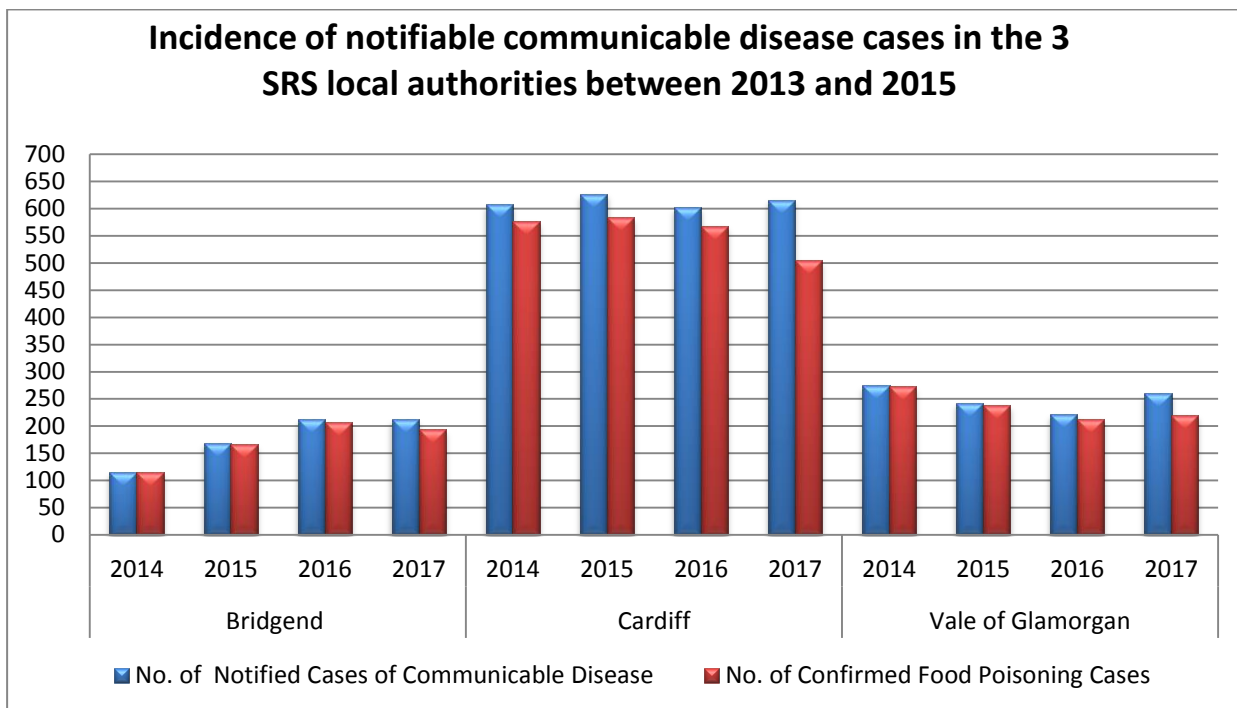
¹ Confirmed food poisoning as applied in the 'Disease' tab in Tarian

Graph 1: Incidence of unconfirmed cases (suspected food poisoning) investigated in the local authorities between 2015 and 2017



Graph 2 outlines the incidence of confirmed communicable disease and food poisoning. Confirmed cases of food poisoning continue to make up the greatest proportion of confirmed communicable disease, although in Cardiff this proportion continues to decrease with a noticeable reduction in 2017 – 82% compared to 94% in 2016. Bridgend and the Vale of Glamorgan remain relatively stable. Increased notifications of communication disease not associated with food include Legionella, Lyme Disease, Hepatitis A, Cryptosporidium, Giardia and Shigella.

Graph 2: Incidence of notifiable communicable disease cases in the 3 SRS local authorities between 2014 and 2016



Graph 2 also shows an increase in total communicable disease cases in Cardiff and the Vale whereas Bridgend remains relatively stable. As expected the greatest incidence occurred in Cardiff, reflected by the population size and activity.

3.2 Performance activities

The investigation of sporadic and outbreak cases of communicable disease require a reactive service and our performance measures therefore reflect this by measuring response to notifications.

Sporadic cases

The Notification Guidance made under the Health Protection (Notification) (Wales) Regulations 2010, (updated 2016) dictates the response times required to be taken by local authorities investigating cases of communicable disease. All cases of communicable disease notified to SRS are responded to and every effort is made to undertake a full investigation. The response time is dependent on the public health significance of individual pathogens see below.

Table1 : Target response times for common communicable disease pathogens

Pathogen	Response time
Campylobacter	Within 2 working days, unless part of cluster
Cryptosporidium	Within 1 working day, or same day if outbreak
Giardia	Within 1 working day
Salmonella spp.	Within 1 working day, typhoid, paratyphoid – immediate action
E. coli O157	Immediate action
Hepatitis A	Same day
Hepatitis E	Next working day
Shigella	Sonnei – Within 1 working day, other sp. immediate action

Legionella spp.	Same day
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NB: Response times are currently under review

A review of response and interview times for Campylobacter investigation (the most common gastrointestinal pathogen) in 2017 confirmed relatively consistent response rates and interview times over the 3 authorities. A notable improvement was observed in Bridgend and the Vale of Glamorgan since adopting the approach utilised by Cardiff. The response rates (the percentage of notified Campylobacter cases that are interviewed) in the 3 authorities from 2017 and 2014 are outlined below:

	2017	2016	2015	2014
Cardiff	93%	94%	96%	91%
Bridgend	96%	97%	77%	75%
The Vale	97%	96%	50%	44%

Response rates are determined by the method of interview and the promptness to respond to notifications. Response rates will be good when cases are interviewed by telephone within a couple of days of notification. Evidence indicates that people are more willing to engage if still experiencing symptoms or have recently recovered. Early interview supports more accurate reporting of exposure to risk factors and facilitates early detection of outbreaks. Response times for all 3 authorities remain high.

Table 2 outlines the mean, median, mode and range for the number of days between the date of notification of a campylobacter case and the interview date for the last 3 years. Standards remain high and continue to improve. This endorses the benefit of harmonising procedures to those of Cardiff which reflect the Good Practice Statement for Campylobacter Investigation and Surveillance. The Good Practice Statement supports local authorities to provide a consistent and efficient service for the investigation and surveillance of Campylobacter.

Table 2: Average Interview Times

LA	Mean			Median			Mode			Range		
	2017	2016	2015	2017	2016	2015	2017	2016	2015	2017	2016	2015
Bridgend	2.4	2.7	6	1	2	2	0	2	0	0-36	0-17	0-26
Cardiff	1.9	2.4	3	0	2	2	0	0	2	0-30	0-26	0-38
Vale	1.6	2.2	14	0	1	11	0	0	7	0-16	0-24	0-37

Table 3 outlines the range and frequency of the common notifiable communicable disease cases reported and investigated in the 3 authorities. Campylobacter is the most common cause of bacterial gastroenteritis in the UK and the incidence of infection in Bridgend, Cardiff and the Vale of Glamorgan far exceeds other notifiable diseases including common food poisoning pathogens.

Table 3: Incidence of notifiable communicable disease cases in 3 local authorities between 2014 and 2017

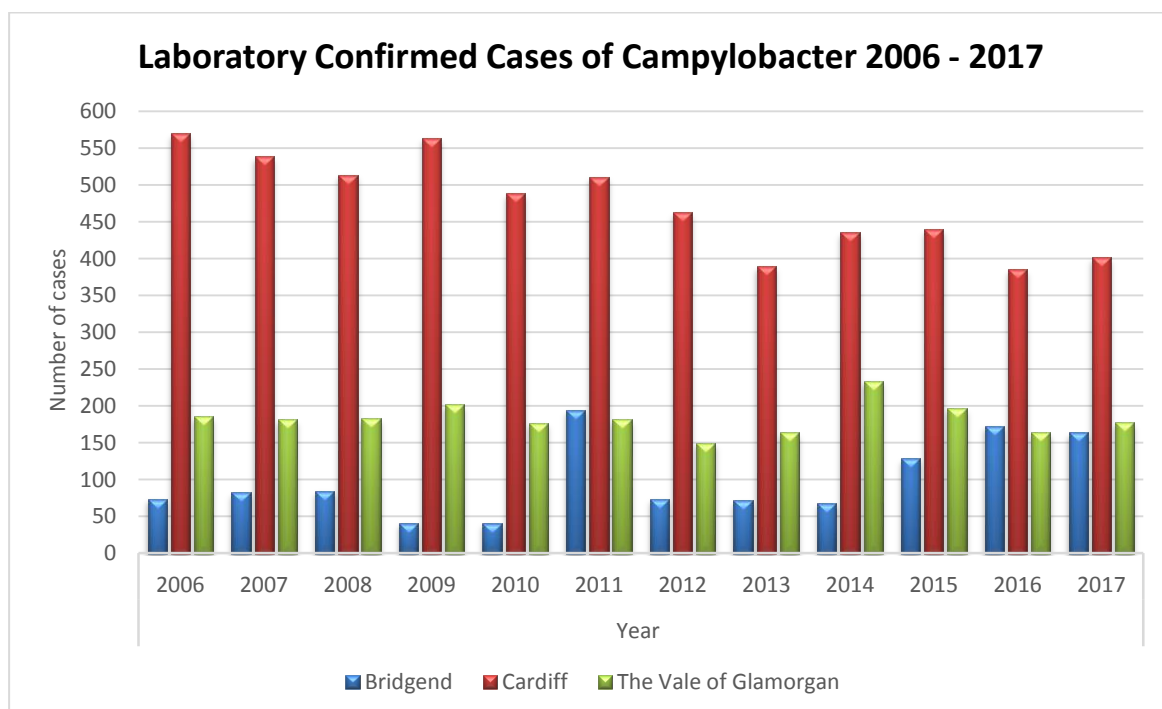
	Bridgend				Cardiff				Vale of Glamorgan			
	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017
Campylobacter	85	137	173	164	435	442	385	400	234	198	164	177
Salmonella	16	14	13	23	40	53	60	50	10	12	16	27
Cryptosporidium	7	6	12	5	35	42	71	22	10	15	18	11
Giardia	1	2	1	0	49	29	39	34	10	10	7	5
E. coli O157	4	1	1	1	4	4	2	1	2	2	2	1
Hepatitis E	1	6	2	2	5	7	4	5	4	1	4	3
Hepatitis A	0	0	0	0	5	1	3	5	0	0	0	1
Listeria	0	0	0	1	0	2	1	1	1	0	2	0
Legionella	0	2	2	3	10	9	3	4	2	2	0	2
Shigella	0	0	0	1	8	13	3	4	1	3	0	0
Other	1	1	8	11	11	25	31	81	1	0	9	25
Total	115	169	212	211	602	627	602	607	275	243	222	252

NB. 'Other' includes Entamoeba histolytica/dispar, Borrelia burgdorferi (Lyme disease), leptospira, Vibrio cholera, Taenia, Cyclospora, salmonella typhi, norovirus. In Cardiff the 81 'Other' included: 62 Norovirus, 6 Mycobacterium chelonae, 5 Borrelia burgdorferi (Lyme disease), 3 Entamoeba histolytica/dispar, 2 Taenia, 2 Vibrio and 1 Cysticercosis

Campylobacter Infection

The trend in Campylobacter notification has varied across the three authorities (Graph 3), in Cardiff there has been a general decline in cases over the last 12 years whereas the trend has increased in Bridgend. The Vale of Glamorgan has remained relatively stable with a slight decreasing trend over the last four years. Campylobacter infection is commonly attributed to exposure to contaminated poultry and more recently environmental exposure has emerged as a notable contributory factor.

Graph 3: Reported cases of Campylobacter from 2006 – 2017



A full analysis of the characteristics and risk factors associated with Campylobacter infection in Bridgend, Cardiff and the Vale of Glamorgan from 1st January to 31st December 2017 was undertaken, the full report can be found in Appendix B.

Confirmed cases reported to SRS were interviewed using a standardised questionnaire and Epi Info™ for Windows 7 was then used to analyse the data. 741 cases met the case definition of which 702 were interviewed, a response rate of 95%.

Campylobacter infected people of all ages, the most common age group was 70 years and above, followed by the 50-59 years age group and the lowest incidence was seen in 10-19 year olds. The rate of infection by age group in SRS reflected that of Wales. In terms of gender, men were infected more than women (56%:44%) and specifically in the age groups under 30 years and above 59 years.

Local geographical differences in incidence and rate of infection were observed; post code CF61 (Llanwit Major, St. Donats and Marcross) had the lowest number of cases and the lowest infection rate whereas Penarth, Sully and Dinas Powys (CF64) had the highest rate of infection. The highest number of cases was reported in CF14 postcode (north Cardiff). Almost all cases (97%) resided as a single household and 99% of cases lived in properties served by mains water supply.

As expected the most common food associated with infection was the consumption (445, 68%) and preparation (313, 49%) of poultry in the home. Of those that prepared poultry, 148 (47%) reported washing raw meat packaging before discarding and a third (33%) reported washing raw poultry and not using separate chopping boards for raw and cooked foods. In addition, salad and fruit consumption were notable exposures; 457 (74%) cases reported eating fruit in their incubation period and 393 (62%) reported eating salad, the most common items being lettuce, tomato and cucumber. Consumption of poultry from a commercial business was also an important risk factor (308, 46%) and the most common settings were restaurants and takeaways.

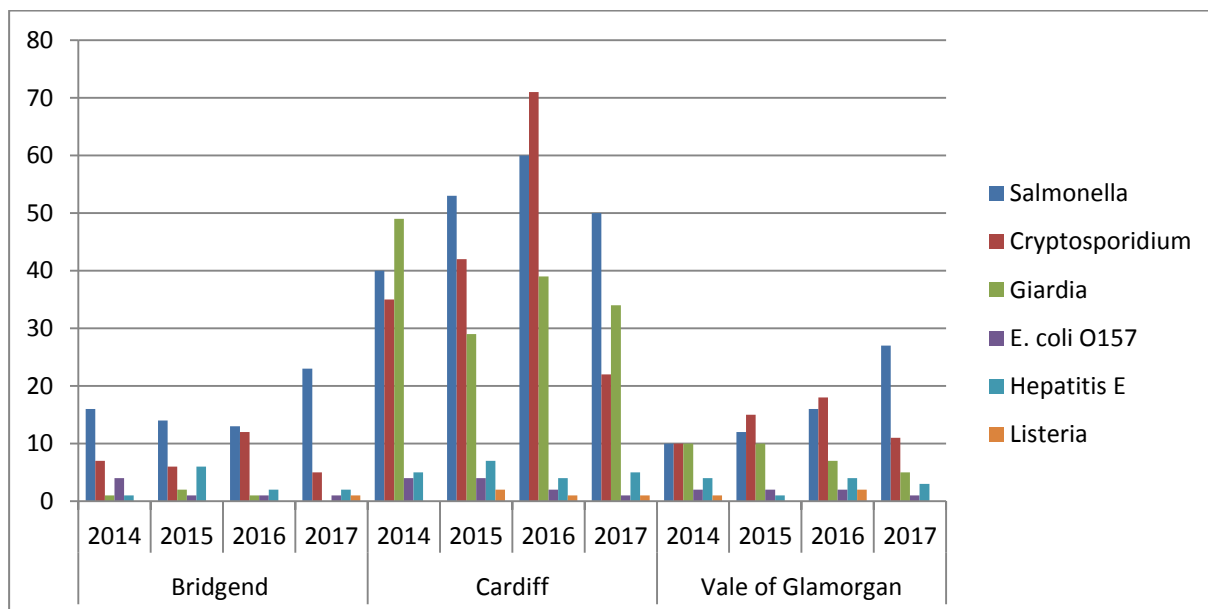
The most common environmental risk factor was animal contact (348, 50%), of these 330 (95%) reported contact with a pet and 5% reported contact with animals at farms, parks or zoos. 170 (25%) cases reported exposure to faeces, the majority (104, 61%) from cleaning up after pets. And finally travel abroad could have accounted for 109 (16%) cases of illness but only 28 cases were abroad for their whole incubation period.

Campylobacter infection is a significant public health risk. Its epidemiology remains complex as most cases are sporadic and remain unexplained. The report underlines the importance of thorough investigation and provides evidence for targeted public health education of risks associated with the handling, preparation and cooking of poultry both in the home and commercial setting. The report also suggests the need for further investigation into the significance of salad consumption as a contributory factor for Campylobacter infection.

Pathogens of public health significance

Pathogens of public health significance (those other than Campylobacter) commonly require more detailed investigation. This is particularly true for Shigella, Hepatitis A and E, E. coli O157, Legionella and Giardia where either the infective nature of the pathogen and therefore its ability to spread within the community or the seriousness of the infection it causes require additional responses. Many of the common pathogens classified as food poisoning are not always acquired by consumption of contaminated food but more commonly through exposure to recreational water, animal contact, environmental contamination and person to person transmission. This commonly includes infections associated with Giardia, Cryptosporidium and E. coli O157. The graph below illustrates the common pathogens associated with food poisoning in SRS.

Graph 4: Incidence of the common pathogens causing food poisoning in SRS between 2014 – 2017



Overview of Investigations into Hepatitis A infections in 2017 in Bridgend, Cardiff and the Vale of Glamorgan

Hepatitis A is a human virus transmitted through ingesting contaminated water or food and through person to person spread by the faecal oral route. It is more prevalent in areas where sanitation and hygiene are poor and living conditions are crowded. It is therefore mainly associated with travel to developing countries. Infection usually begins between 2- 6 weeks after exposure. Symptoms can be mild or severe and include fever, muscle/joint pain, jaundice, vomiting and diarrhoea, pale stools, dark urine and itchy skin. It usually takes around 2 months to clear up but can last for 6 months. It is recommended that you do not consume alcohol until your GP states it's safe to do so.

8 cases of Hepatitis A were reported throughout the 3 authorities. 6 in Cardiff (1 worked in Cardiff but not a Cardiff resident), 0 in Bridgend and 2 in Vale of Glamorgan. Of the 2 Vale cases one was later classified as negative and the other the source was unidentified, however a takeaway establishment was investigated but no other cases were reported linked to this premise.

Of the 6 cases associated with Cardiff, 3 were reported as linked to a European wide outbreak of Hepatitis A which had been on-going since 2015 and all linked source as MSM (men who have sex with men). Two cases, a Cardiff resident and a Manchester resident were both linked to a male only sauna club in Cardiff. A visit was undertaken to the club and infection control advice including cleaning and disinfection and food safety was given. The other MSM linked cases had risks linked to travel to gay events outside the SRS areas. Vaccination was offered to case contacts and was arranged by Public Health Wales with assistance from CD team, this can often be challenging given the sensitive nature of the cases' relationships. A new revised surveillance questionnaire was brought in 2017 which was developed by PHE, this questionnaire asks further sensitive questions about sexual practices and has raised concerns amongst some officers at regional task groups, about the appropriate manner to ask these questions. To ensure a consistent and sensitive approach it has been proposed that Lead Officer training will cover these issues in the near future.

Hepatitis A infection associated with a restaurant in Cardiff

In addition to the above cases, the team worked in partnership with neighbouring local authority and Public health Wales to prevent the onward transmission within the community. The case and his son worked in a Cardiff restaurant. Timely notification assured an efficient investigation and quick contact tracing. Two Incident Management Team meetings were held in 2 days and resulted in blood testing of close family contacts, exclusion of the son from work as a precaution and vaccination of 17 staff members in the restaurant. The investigation team worked closely with the restaurant during this time with full compliance from staff members resulting in no further cases of infection

Outbreaks in 2017

In addition to the on going investigation of sporadic cases of food poisoning in 2017, a total of 71 outbreaks were identified and investigated by the Communicable Disease Team, of which:

- 24 outbreaks occurred in Bridgend;
- 34 in Cardiff; and
- 13 in the Vale of Glamorgan.

This compares to 79 outbreaks in 2016: 20 outbreaks in Bridgend, 47 in Cardiff and 12 in the Vale of Glamorgan.

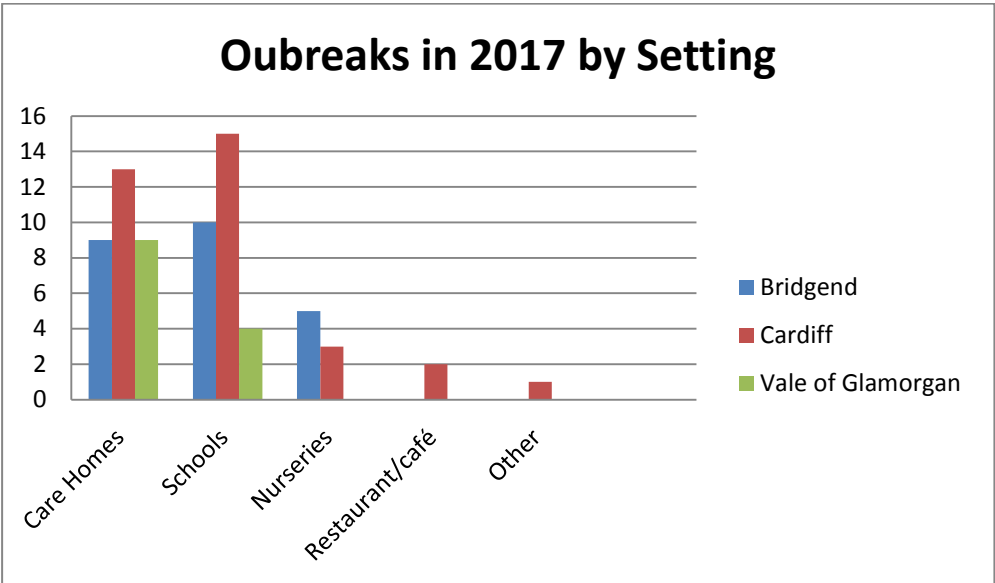
An outbreak is defined as illness affecting two or more people who share a common exposure factor linked by time, place or person. The outbreaks are commonly caused by suspected Norovirus and the most common mode of transmission associated with these is

either person to person or environmental contamination rather than foodborne transmission.

The graph below outlines the outbreaks that occurred in Bridgend, Cardiff and the Vale of Glamorgan, by setting. Schools make up 41 % and care homes account for 44% of all outbreaks (comparable with 2016 proportions – schools 30, 38% and care home 26, 33%); these outbreaks were associated with confirmed or suspected Norovirus infections. Considerable work is undertaken to support educational and care home settings, particularly during the winter months to minimise the disruption caused by these viral infections. Norovirus infections are difficult to prevent in semi enclosed settings but their longevity and level of disruption can be greatly reduced with early intervention and application of effective public health measures.

In addition to the telephone advice, in 2017 the CD Team have also undertaken a number of face to face training sessions in schools and care homes involving key personnel such as head teachers, caretakers and cleaners to offer practical advice on areas such as the most appropriate cleaning and disinfection methods and products to use in an outbreak situation. Also in February 2017, SRS held a training forum event targeted at residential care homes from Cardiff, Bridgend and the Vale of Glamorgan which again gave practical advice on topics such as infection control and health and safety arrangements.

Graph 5: Outbreaks in 2017 in Bridgend, Cardiff & Vale of Glamorgan.



Notable outbreak – Mycobacterium chelonae associated with tattooing

On 28th June 2017 the Public Health Wales Health Protection Team were contacted by a consultant dermatologist at the Royal Gwent Hospital about two cases of skin rashes associated with tattoos. Infection with Mycobacterium Chelonae was suspected and both patients had attended the same tattooing studio in Cardiff. Staff from the communicable Disease Team undertook urgent investigations and targeted case finding.

In total 10 cases met the case definition. Six of these were probable cases and four were confirmed on skin biopsy (see diagram below). Of the confirmed cases, three were positive for mycobacterium culture and one had granulomas on histology.

Diagram illustrating rash caused by *M. chelonae* infection in two cases



There are no national or other industry guidelines for infection control for tattooists. Nevertheless, investigations at the tattooing studio revealed good infection control practices and good record-keeping. However at the time of the outbreak inks were diluted, using a combination of alcohol and witch hazel made up in 100 ml bottles and distilled water used to rinse equipment etc was kept in a container ready for use for up to a fortnight after being distilled on the premises and decanted as required. There are no guidelines for how long distilled water can be kept in this way, and environmental sampling of this equipment was negative. The expert consensus of the Outbreak Control Team is that this is the most likely cause of the outbreak.

The majority of cases were initially undiagnosed in primary care and not treated with an effective antibiotic regimen. There was no national consensus on antibiotic treatment and outbreak specific recommendations had to be devised and shared with treating physicians. Tattoo associated *M. chelonae* is an emerging public health risk with limited awareness within the tattooing industry and health professionals.

The final Outbreak Control Team Report is due to be published and includes recommendations for the environmental health and medical profession as well as the tattooing industry. These endorse the requirements of the forthcoming Public Health (Wales) Act 2017 requirement for a Special Procedures Licensing scheme and will be utilised during the development phase of this legal requirement.

3.3 Achievements

Minimising the spread of infection and public health impact presented by outbreak and sporadic cases of communicable disease

Enhanced surveillance programme during Champions League final

The UEFA Champions League Final took place in Cardiff on Saturday 3rd June 2017. It was the single biggest sporting event in the world during 2017. The event itself extended from 29th May to 5th June 2017. In terms of size and complexity, it is secondary only to the Olympics and the Football World Cup.

An estimated 250,000 people visited Cardiff during the event. Mass gathering events like this increase the risk of infectious disease incidents. The particularly high population density may facilitate transmission of infectious diseases. Through population movement, visitors are exposed to the local population's diseases (to which they may be more susceptible) and may carry the disease back to their home area, potentially infecting others over a wide geographic area. Conversely, local populations may be exposed to exotic diseases imported by international travellers.

The team have previously worked with Public Health Wales during 2012 Olympic and Paralympic Games and 2014 NATO Summit to provide a proportionate surveillance response which facilitates the timely identification of events associated with the 2017 Champions League Final, of public health significance. Surveillance extended from 30th May to 9th June and involved the production of a daily situation report based on a daily review of disease notifications, laboratory reports, GP Surveillance, media and social media and daily intelligence from SRS Communicable Disease and Health and Safety Team and Public Health Wales Health Protection Teams.

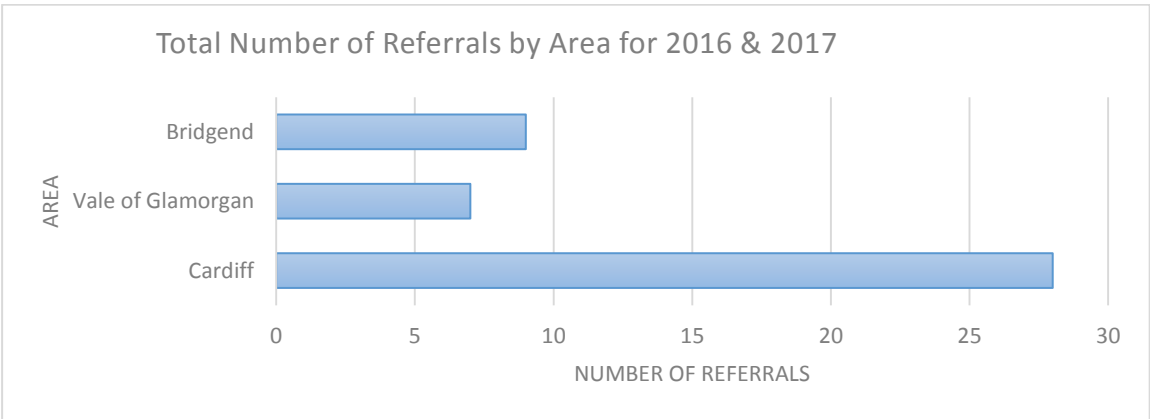
In real terms this required the team to review all new notifications of confirmed and suspected communicable disease, health and safety complaints, incidents and accidents on a daily basis and reporting any significant issues Public Health Wales but a 10:00am deadline. Over this time period work plans were amended to accommodate the increased surveillance, no major incidents were reported.

Enhanced Surveillance of cases and clusters of confirmed and suspected food poisoning As a matter of routine, food business are referred to the food safety team for further investigation when case interviews identify a plausible link between illness and consumption of food products from that business. The decision to refer a food premises is based on the

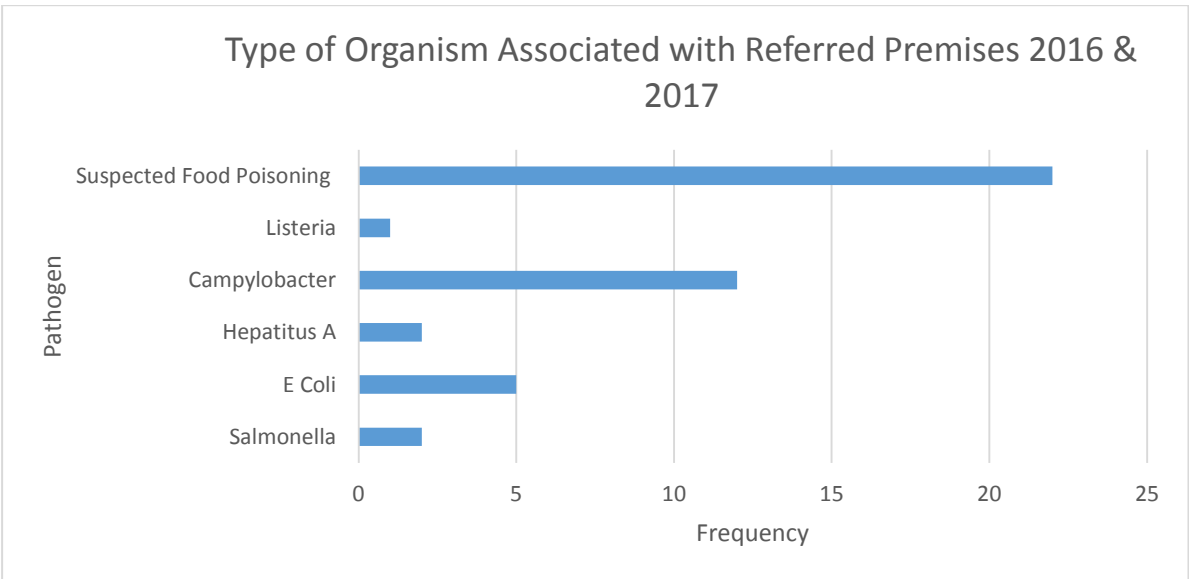
information obtained during interview. In the case of suspected food poisoning, an Officer first considers the likelihood that the illness is actually the result of food poisoning and then the likelihood that the food poisoning was a result of eating at a particular food premises.

To better understand the types of businesses associated with the food poisoning illness and inform future interventions and funding streams a database was set up in 2016 to collate and review information on the businesses referred for further investigation. 44 referrals were made to the Food Safety Team over the two years:

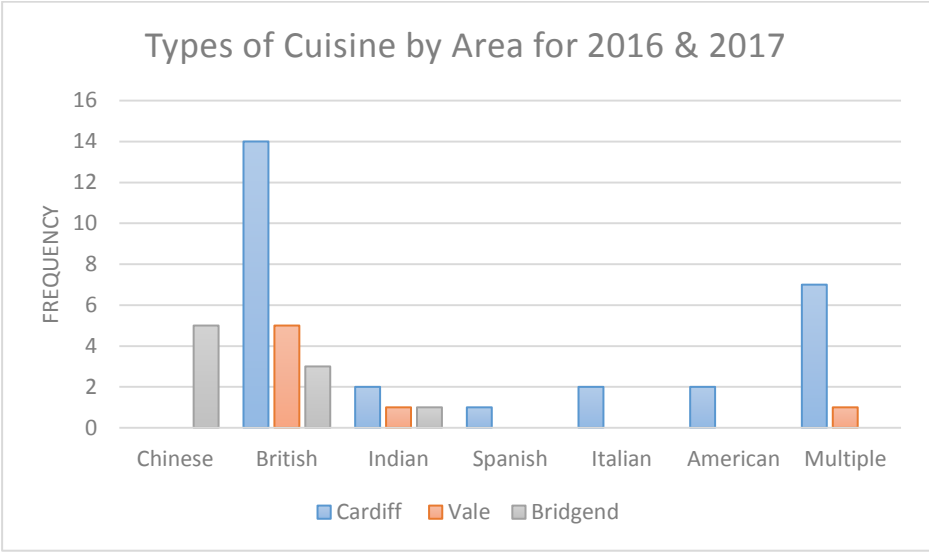
	2017	2016
Cardiff	11	17
Bridgend	4	5
Vale of Glamorgan	1	6
Total	16	28



The following graph outlines the causative pathogens associated with the referrals, 22 (50%) were associated with suspected food poisoning.



'British' cuisine accounts for a higher number. As noted in the 2017 Summary, this cuisine type may in fact offer a variety of cuisine items i.e. a supermarket and therefore may need further examination if the data is used for targeted interventions.



Consultation and collaboration with businesses and stakeholders to improve regulatory compliance and protect public health

Consolidating support in the event of a gastro-intestinal outbreak in schools and residential care homes. The Team continues to proactively support schools to effectively manage gastro intestinal outbreaks with the result that not one school has been required to close on public health grounds. The success of this support is through good partnership working and early application of public health measures throughout the 3 local councils. The initiative has now being extended to include residential care home, the second most common setting for gastro-intestinal outbreaks. This includes the delivery of workshops to school and cleaning staff, the provision and dissemination of standardised guidance and the improvement of reporting mechanisms. In 2017 and additional 8 training sessions were delivered

- Cardiff – 4 (3 schools, 1 care home)
- Bridgend – 3 schools
- Vale - 1 school

Continued Partnership Working with Residential Care Homes – Safeguarding the vulnerable Residential Care Homes continue to be a priority for Communicable Disease and Health and Safety.

The rationale for this project was to build on previous work with care homes regarding infection control and health and safety management. A Care Home Forum organised by SRS in February 2017 confirmed where there was enthusiasm amongst managers and business owners for further collaborative working and information sharing. Following a discussion with Welsh Government it was considered a useful opportunity to use the functions of the

local authority to build on the knowledge and understanding of the issues facing care homes when managing flu and in particular the vaccination of staff.

The project involved undertaking an impact assessment of flu illness of staff on the operation of registered care homes in the SRS areas of Bridgend, Cardiff, and the Vale of Glamorgan during 2017.

The overall aim of this survey was to provide information on:

- the uptake of vaccination in staff,
- how care homes manage staff illness particularly flu,
- those who have managed flu outbreaks, and
- any adverse impacts on the business as a result of staff illness

Additionally, it was anticipated that the information provided would assist the local authority and other stakeholders in understanding the needs of care homes and contribute to providing targeted support and training, enabling us to consider the most appropriate and practical ways to support care homes in reducing the negative impact of flu on the operation/staffing levels. 78 (51%) registered care homes participated in this survey.

The presence of a flu policy appeared significant in the effective management of influenza in care homes, 45 (58%) homes did not have a flu policy or have a member of staff designated as the 'lead' for flu vaccinations. Only 34 (44%) homes reported having a 'lead' for flu vaccinations. The benefit of having a formal policy that is led by a named individual within the home has been shown by NHS care settings to work well, particularly where 'flu champions' are trained and then encourage staff uptake of the flu vaccine. This approach has proved significant in increasing the numbers of staff receiving the vaccination. Several homes with a flu policy also reported that the information on flu especially NHS information from a recognised source was useful and this together with encouragement and support to have the vaccination through various occupational opportunities including at induction, team meetings, notice boards, and web based systems worked well. Clearly, a flu policy is a prerequisite to encouraging staff uptake of the flu vaccine.

Care homes frequently reported the need for the vaccine to be administered free to staff within the work setting at the same time as the residents' vaccination programme. In the case of those homes owned by the Vale of Glamorgan Council, this employer's occupational health team visited local care homes and administered the vaccine in the home at no cost to the staff and this was seen as a positive way to encourage uptake.

A key frustration for several homes was the inconsistency of services offered by local GP practices, some practices offered the vaccine free to care home staff whilst others would only provide free vaccination if the care home staff suffered from an eligible health related condition.

It was disappointing that only 14 (18%) homes reported maintaining staff vaccination records, these records could help to monitor staff sickness and provide evidence of the impact that staff vaccination has on the operation of the care home.

The value of using agency staff particularly during high staff sickness was contentious. Only 11 of the 24 (46%) homes that reported using agency staff used them to cover staff illness. Where agency staff were not used, existing staff were frequently called upon to cover shifts especially the 'direct contact with residents' staff as these staff had the most days reported sick. The impact of using existing staff was that staff become tired and over stretched which could lead to accidents and error within the home as well as compromising the quality of care to residents. However, the use of agency staff to alleviate the stress to existing staff was also reported to cause anxiety in residents due to unfamiliarity. In addition the standard of service can be compromised as new staff are unfamiliar with the home's standard operating procedures. Moreover agency staff who would regularly work within different homes were perceived as having a greater potential to spread the virus through several homes within a short period of time.

Limited information was provided on the cost of using agency staff but it was clear that the costs were seen to be a large financial consideration and given the substantial impacts reported when using agency staff, they can be viewed as a significant cost and impact burden on the home. The information that was provided could be used to compare with the costs of vaccinating staff within the home.

The flu immunisation programme is effective in preventing disease in working-age adults and is the single best way to protect against catching or spreading flu. The vaccination is particularly important for staff in care homes that look after older people, as these are a group who are very vulnerable to severe complications of flu. It is clear from this survey, a similar project undertaken by Public Health Wales in 2014 and anecdotal evidence from care home managers that reactive management of staff sickness associated with flu creates a financial burden and compromises not only the quality of service offered to residents but the health, safety and welfare of staff and residents. With this in mind the most cost effective solution to support registered care homes would appear to be the provision of the flu vaccine to 'direct resident contact' staff within the care home setting. Evidence suggests that the cost of sickness pay and covering staff whether internal staff or an agency is a burden which can be offset against the costs of vaccination.

Since submitting a report to Welsh Government two consultation workshops have been organised in partnership with Welsh Government for care homes to discuss the management of infectious disease, presentations and discussions will centre around the management of legionella, management of the forthcoming flu vaccination for staff and lessons learned from 2017 gastro-intestinal outbreaks.

3.5 Customer Evaluation Forms

Following interviews cases of communicable disease are routinely sent evaluation questionnaires with advice sheets on their causative organism. This customer evaluation process was formally introduced in Bridgend and the Vale of Glamorgan in 2016. The response rate for completion of the forms remains low in 2017 – 21% comparable with 2016 - 22%. One of the main reasons for the low response rate is that where cases have been very ill or hospitalised they often don't wish to relive events by completing a questionnaire. Some key findings are outlined below:

Feedback from all cases:

- 196/200 (98%) cases reported being satisfied with the service, of which 172/200 (86%) reported being 'very satisfied'
- 191/199 (96%) cases reported that the advice given by officers was useful
- 120/199 (60%) cases reported changing their food preparation practices or choices as a result of the interview
- 187/199 (94%) cases reported that the investigating officer suggested a cause for the infection

Feedback from Campylobacter cases:

- 153/170 (90%) cases reported feeling better prepared to prevent further infection

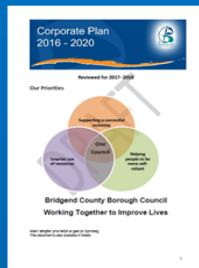
Feedback from cases infected with a pathogen of public health significance

- 32/32 (100%) cases reported that the preventative measures were clearly explained and of these, 30/32 (94%) reported explanations were very clear

The most valuable information received from a public health perspective is the potential positive change in behaviour or choices reported as a result of our intervention.

Appendix A Corporate priorities of partner local authorities

Bridgend County Borough Council



Corporate priorities

- Supporting a successful economy;
- Helping people to become more self reliant;
- Smarter use of resources.

Outcomes

- A successful , sustainable and inclusive economy that will be supported by a skilful, ambitious workforce.
- Individuals and families that will be more independent and less reliant on traditional Council services.
- A Council that has lean, robust processes and a skilful workforce. A Supported third/community sector with the opportunity to take on services that meet citizens' needs.

City of Cardiff Council



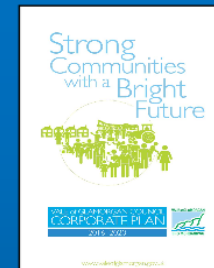
Corporate priorities

- Better education and skills for all;
- Supporting vulnerable people;
- An economy that benefits all our citizens;
- Working together to transform services.

Outcomes

- People in Cardiff are safe and feel safe;
- People achieve their full potential;
- Cardiff has a prosperous economy;
- Cardiff is fair, just and inclusive;
- People in Cardiff are healthy;
- Cardiff is clean and sustainable;
- Cardiff is a great place to live, work and play.

Vale of Glamorgan Council



Corporate priorities

- Reducing poverty and social inclusion;
- Providing decent homes and safe communities;
- Promoting regeneration, economic growth and employment;
- Promoting sustainable development and protecting our environment;
- Raising overall standards of achievement;
- Valuing culture and diversity;
- Encouraging and promoting active and healthy lifestyles;
- Safeguarding those that are vulnerable and promoting independent living.

Outcomes

- An inclusive and safe Vale;
- An environmentally responsible and prosperous Vale;
- An aspirational and culturally vibrant Vale;
- An active and healthy Vale.

Appendix B



Shared **Regulatory** Services
Gwasanaethau **Rheoliadol** a Rennir



**A Review of Campylobacter infection in the Council
areas of Bridgend, Cardiff and the Vale of Glamorgan in
2017**

Executive Summary

Campylobacter is the most common cause of bacterial gastroenteritis in the UK and the incidence of infection in Bridgend, Cardiff and the Vale of Glamorgan far exceeds other notifiable diseases including common food poisoning pathogens. Campylobacter infection is commonly attributed to exposure to contaminated poultry and more recently environmental exposure has emerged as a notable contributory factor. This report reviews the characteristics and risk factors associated with Campylobacter infection in Bridgend, Cardiff and the Vale of Glamorgan from 1st January to 31st December 2017.

Confirmed cases reported to Shared Regulatory Services (SRS) were interviewed using a standardised questionnaire and Epi Info™ for Windows 7 was then used to analyse the data. 741 cases met the case definition of which 702 were interviewed, a response rate of 95%.

Campylobacter infected people of all ages, the most common age group was 70 years and above, followed by the 50-59 years age group and the lowest incidence was seen in 10-19 year olds. The rate of infection by age group in SRS reflected that of Wales. In terms of gender, men were infected more than women (56%: 44%) and specifically in the age groups under 30 years and above 59 years.

Local geographical differences in incidence and rate of infection were observed; post code CF61 (Llanwit Major, St. Donats and Marcross) had the lowest number of cases and the lowest infection rate whereas Penarth, Sully and Dinas Powys (CF64) had the highest rate of infection. The highest number of cases was reported in CF14 postcode (north Cardiff). Almost all cases (97%) resided as a single household and 99% of cases lived in properties served by mains water supply.

As expected the most common food associated with infection was the consumption (445, 68%) and preparation (313, 49%) of poultry in the home. Of those that prepared poultry, 148 (47%) reported washing raw meat packaging before discarding and a third (33%) reported washing raw poultry and not using separate chopping boards for raw and cooked foods. In addition, salad and fruit consumption were notable exposures; 457 (74%) cases reported eating fruit in their incubation period and 393 (62%) reported eating salad, the most common items being lettuce, tomato and cucumber. Consumption of poultry from a commercial business was also an important risk factor (308, 46%) and the most common settings were restaurants and takeaways.

The most common environmental risk factor was animal contact (348, 50%), of these 330 (95%) reported contact with a pet and 5% reported contact with animals at farms, parks or zoos. 170 (25%) cases reported exposure to faeces, the majority (104, 61%) from cleaning up after pets. And finally travel abroad could have accounted for 109 (16%) cases of illness but only 28 cases were abroad for their whole incubation period.

Campylobacter infection is an important public health risk. Its epidemiology remains complex as most cases are sporadic and remain unexplained. This study underlines the importance of thorough investigation and provides evidence for targeted public health education of risks associated with the handling, preparation and cooking of poultry both in the home and commercial setting. The study also suggests the need for further investigation into the significance of salad consumption as a contributory factor for Campylobacter infection.

Background

Campylobacter is the most common cause of food poisoning in Shared Regulatory Services for Bridgend, Cardiff and Vale of Glamorgan local authority areas (SRS). All cases that are reported to the Communicable Disease and Health and Safety team are investigated to;

- Prevent the spread of infection
- Establish the source of illness
- Identify if cases are connected
- Educate the public
- Detect outbreaks
- Identify risk factors that are contributing to food poisoning
- Monitor trends
- Gain a better understanding of the epidemiology of foodborne disease
- Evaluate the impact of control measures.

This report outlines the main characteristics and risk factors associated with Campylobacter infection in residents of Bridgend, Cardiff and the Vale of Glamorgan in 2017.

Area Profile

Shared Regulatory Services (SRS) covers the Council areas of Bridgend, Cardiff and the Vale of Glamorgan and serves over 600,000 residents. Extending from St Mellons in the east of Cardiff to Maesteg in the west, the area encompasses Cardiff, the capital City of Wales and the rural areas of Bridgend and the Vale of Glamorgan with their tourist and agricultural economies.

Bridgend is situated on the south coast and comprises an area of 28,500 hectares with a population of just over 140,000 residents. The area consists of mainly ex-coal mining valley communities in the north and to the south, the ex-market town of Bridgend and on the coast Porthcawl, a traditional seaside resort, with a high proportion of elderly residents.

Cardiff continues to grow faster than any other capital city in Europe and is also the largest city in Wales with a population of 360,000. The population increases by approximately 70,000 daily with commuters and visitors and on a typical weekend, its night time economy can attract over 40,000 people and at times, more than 100,000 when the City's Millennium Stadium hosts international events.

The Vale of Glamorgan covers 33,097 hectares with 53 kilometres of coastline, and a population of over 130,000 residents. The area is predominantly rural with a strong agricultural base, but contains several urban and historic areas. Barry is the largest town with the seaside resort of Barry Island. The area also includes Barry Docks and Cardiff International Airport.

Introduction

The incidence of Campylobacter infection throughout SRS far exceeds other notifiable diseases including common food poisoning pathogens and this is a trend observed nationally. It is recognized as a leading cause of acute bacterial gastroenteritis in humans worldwide ^{1,2}. It is the most common cause of food poisoning In the UK, responsible for an estimated 321,000 cases in 2008 ³. For most people the infection is self-limiting with a duration of symptoms of 7-14 days. Although it can cause considerable illness and loss of productivity, it may also be associated with severe disabling consequences, including arthritis and demyelinating disease (Guillain-Barré syndrome) ⁴

The organism is carried in the intestines of many wild and domestic animals, particularly avian species including poultry and it is estimated that 65% of raw chicken carcasses carry Campylobacter bacteria ⁵. Poultry is considered as the most common source for human infections as chickens can carry a high load of Campylobacter without displaying any clinical signs.^{6,7}

Most cases of Campylobacter are sporadic. Risk factors associated with this have been investigated in United States, Canada, Australia, New Zealand, and Europe over the last 20 years ⁸⁻¹³. Most studies have identified consumption of poultry and poultry products as risk factors. Other foods have also been implicated as risk factors. BBQ meat ^{14,15}, raw milk ^{16, 17, 18, 19, 20} and bird pecked milk ^{21, 22}. Other domestic risk factors include consuming untreated water which may contain sewage or animal faeces ^{19, 23}. Contact with infected animals which may also include domestic pets ^{18, 19, 23, 15, 20}, home sewerage problems ¹⁰ and underlying medical conditions ²² also increase the risk of infection.

It has been reported that for every one case of Campylobacter in England and Wales another seven go unreported ²⁴. This indicates that the true economic cost of Campylobacter infection is high, resulting in many work days lost and a greater strain on NHS resources.

Method

SRS receives reports of confirmed cases of Campylobacter from the Public Health Wales (PHW) microbiology laboratory at the University Hospital of Wales, Cardiff for cases residing in Cardiff and Vale of Glamorgan local authority boundaries and from Singleton Hospital, Swansea for cases residing in Bridgend local authority.

A case was defined as:

‘A person who lived within the Bridgend, Cardiff or the Vale of Glamorgan local authority boundaries, had been microbiologically confirmed with Campylobacter and that had been notified to SRS between 1st January 2017 and 31st December 2017’.

Cases were contacted within 24 hours of SRS receiving the report. To minimise recall bias most cases received a phone call on the day of notification. If this was not possible, a letter was sent asking them to contact the Team. When the notification date fell on a weekend or a public holiday, the case was contacted on the next working day. Occasionally visits to the case’s address were made if there had been no response to calls to landline and mobile phones, voicemail and letters. If specifically requested by a case, a postal questionnaire was sent out.

Standardised questionnaires were completed with either the case or a family member, if for example, cases were children under the age of 16, were extremely ill or had other medical issues that prevented them from undertaking the interview themselves. All questions related to exposures within the 1-10 day incubation period.

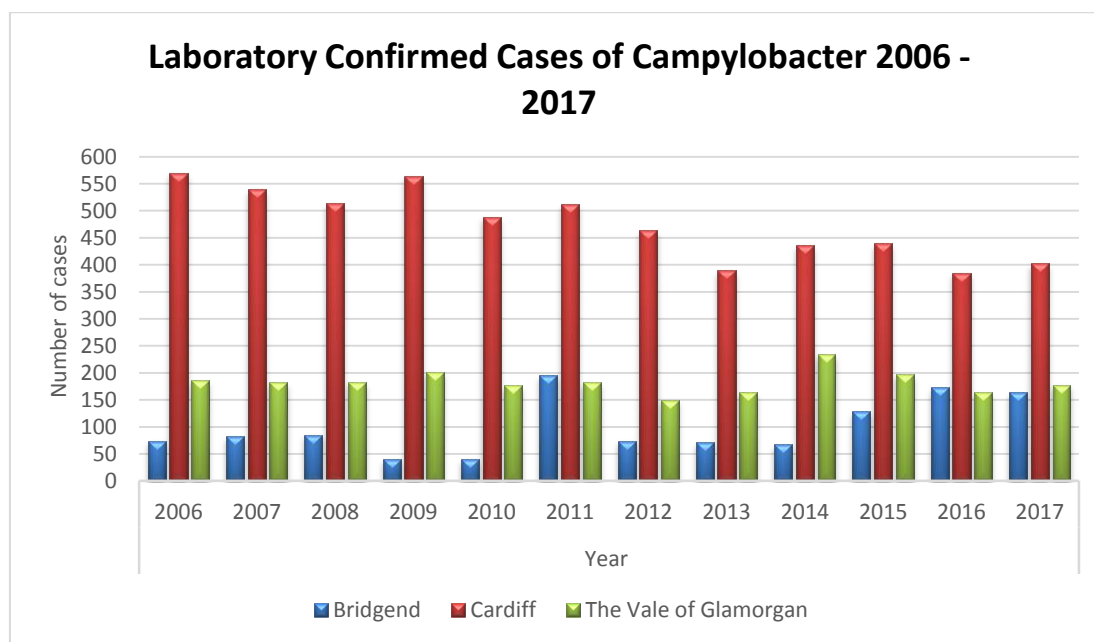
All information collected from case interviews was input into Tarian, a national database used for the reporting and collation of public health data for purposes of surveillance, case and outbreak control and management. It is utilised by all 22 Welsh local authorities and managed by PHW.

This data was then exported into Microsoft Excel for cleaning and analysis. Additional exposure data was entered and analysed in Epi Info for Windows, Version 7 , statistical software for epidemiology.

Results

During the early part of the millennium, Campylobacter infection appeared to be decreasing but from 2013 to 2015 there was a year on year increase and whilst 2016 saw a decrease in case notification for Cardiff and the Vale of Glamorgan a further increase was observed in 2017 (Figure 1).

Figure 1: Reported cases of Campylobacter from 2006 – 2017



In 2017, 741 cases of Campylobacter met the case definition of which 702 were interviewed, a response rate of 95% (Table 1).

Table 1: Response rates by local authority

	Bridgend	Cardiff	Vale of Glamorgan	SRS
Response Rate	96%	93%	97%	95%

Interviews were undertaken by 6 trained officers, 693 (98.7%) cases were interviewed by telephone, 8 (1.1%) in person and 1 (0.2%) by postal questionnaire. 92 (13%) interviews were undertaken on behalf of the case and commonly included husbands, wives, daughters, sons, mums and dads. Some information from 39 non responders was used in the analysis but this did not include data on exposures.

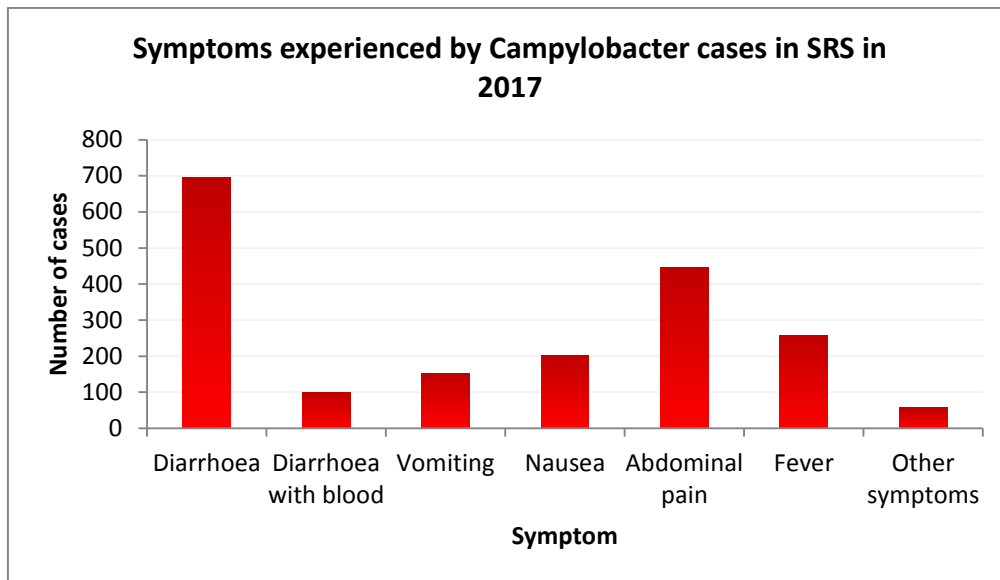
Clinical features

Of the 741 cases notified to SRS, Campylobacter jejuni was the most common species isolated (656, 88.5%), followed by Campylobacter coli (65, 9%), Campylobacter upsaliensis (2, 0.3%), Campylobacter gracilis (1, 0.1%) and Campylobacter ureolyticus (1, 0.1%). Campylobacter species were not identified in 16 cases (2%).

Almost all cases (694, 99%) reported diarrhoea as a symptom (Figure 2). Abdominal pain, fever and nausea were the other common symptoms reported and less commonly reported were joint pain, lethargy, headaches, gas, dizziness, bloating, hallucinations and loss of appetite.

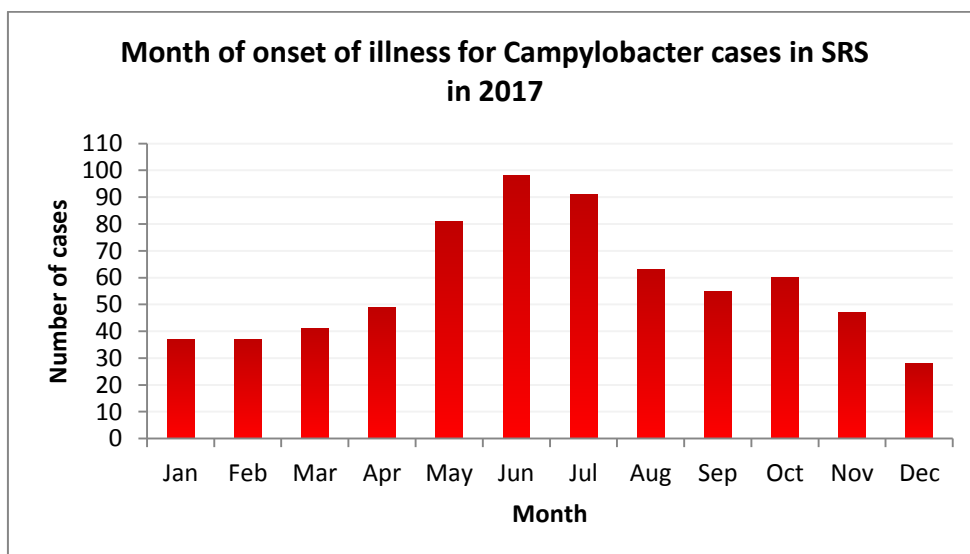
295 cases (42%) were still ill at the time of the interview. For those that had recovered, the range in duration of illness was reported from 1 – 97 days (mean 9, median 7, mode 6).

Figure 2: Symptoms reported by cases



Most cases of infection occurred in late spring/early summer (Figure 3) and the least number of cases were observed in December, January and February. This corresponds with trends seen across the UK.

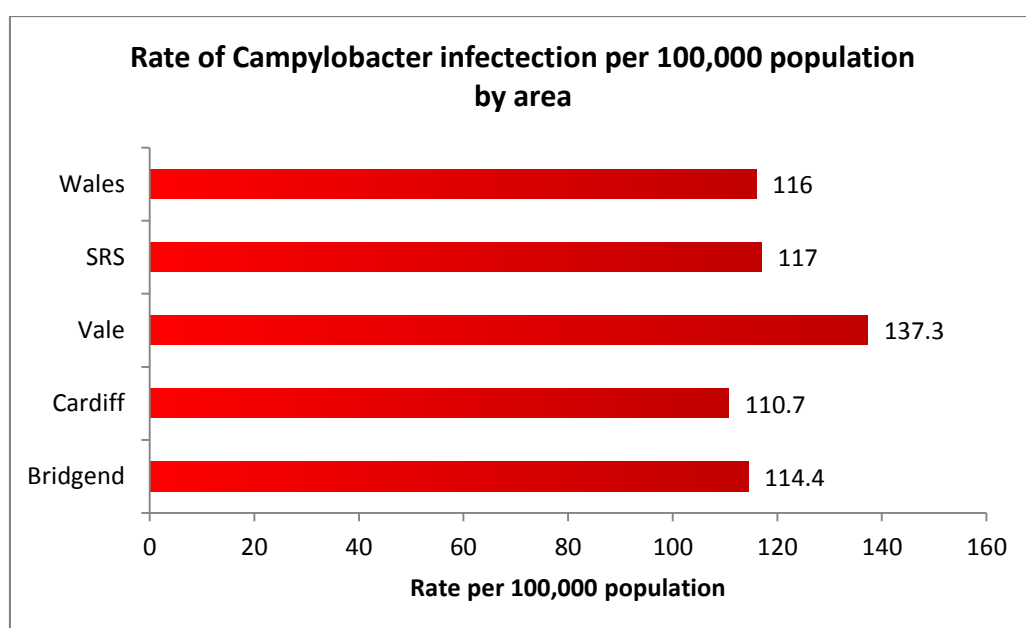
Figure 3: Onset date by month



Demographic characteristics

Of the 741 cases notified to SRS, 164 (22%) lived in Bridgend, 400 (54%) in Cardiff and 177 (24%) in the Vale of Glamorgan. Whilst Cardiff had the highest proportion of cases, it has the lowest rate of Campylobacter infection (110.7 per 100,000) (Figure 4). The rate of infection for the Vale of Glamorgan is notably higher than Cardiff and Bridgend. The Vale of Glamorgan is more rural than Cardiff and Bridgend and this could be a reason for this higher rate of infection. This trend occurs in other more rural Welsh authorities (Appendix 1) and has been documented in a number of studies in Canada ²⁵. The rate of infection for SRS is almost identical with that of Wales.

Figure 4: Comparison of rates of infection



Source: Public Health Wales tableau data. The population statistics were sourced from the Office of National Statistics (ONS) mid-year estimate for 2016.

Gender

The Bridgend population is made up of 50% males and 50% females and both Cardiff and the Vale of Glamorgan populations comprise 49% male, 51% female (ONS, 2016). In 2017, in SRS more males (391, 56%) were infected with Campylobacter than females (310, 44%) and this trend was reflected in all three local authorities. Cardiff observed the biggest difference in gender: 59% males, 41% females infected. The national figure for gender and campylobacter infection is 57% males to 43%, females. This difference could be due to documented differences in behaviour and physiology ^{26, 27, 28}.

Age

The age range of Campylobacter cases was from 0 – 92 years (mean 45, median 49, mode 58). The age groups which had the highest number of Campylobacter cases were the 70+ (118) and the 50-59 year olds (117), followed by the 20-29 year olds (106) and the 60-69 year olds (105) (Figure 5). The 70+ age group also had the highest rate of infection (162.3 per 100,000 population), followed by the 60-69 age group (160.2 per 100,000) and the 50-59 age group (149.4 per 100,000), (Figure 6).

Figure 5: Campylobacter cases by age group

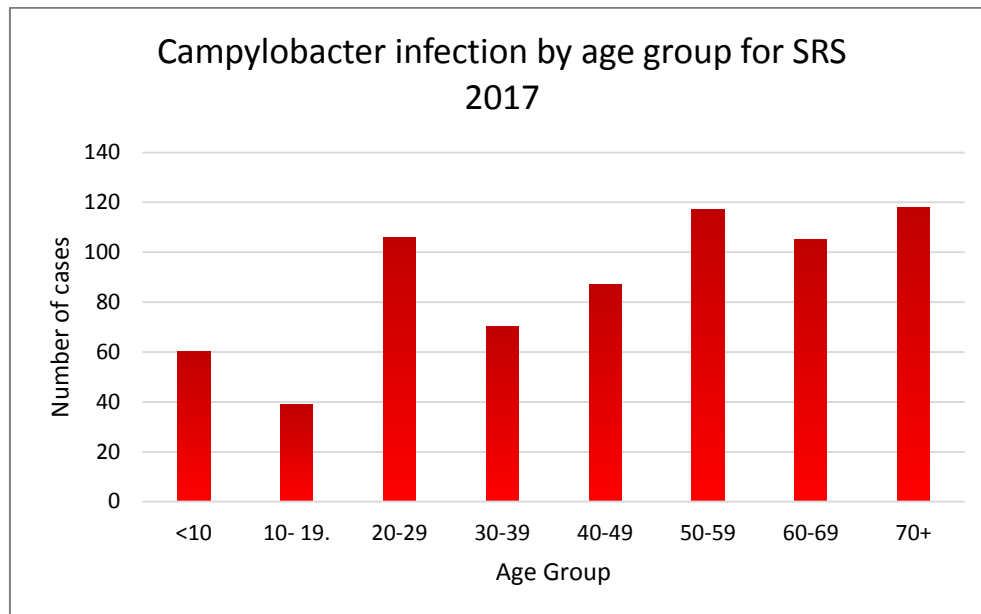
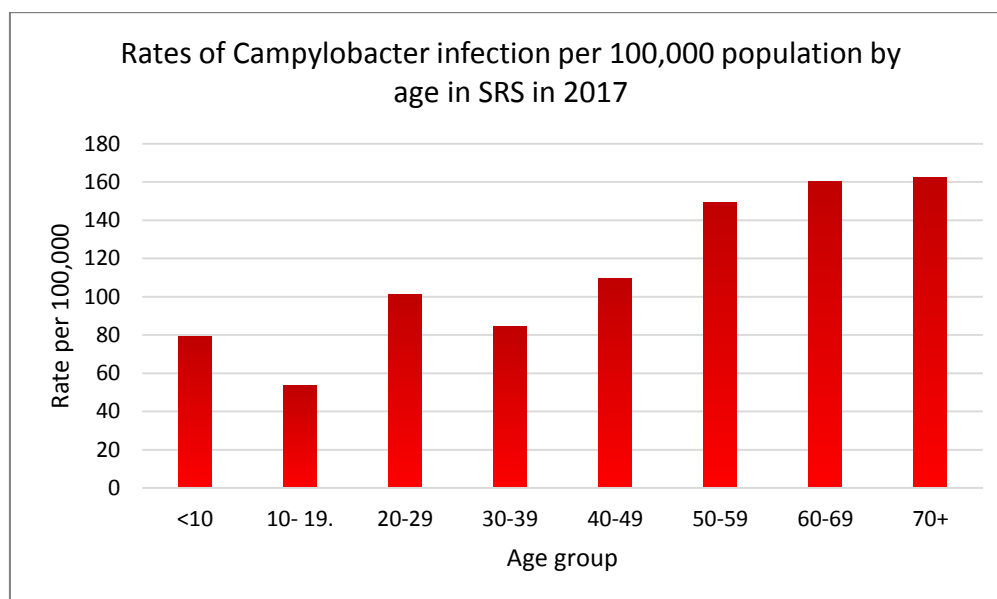


Figure 6: The rate of infection per 100,000 population, by age group.



Source: Data on populations per age group was sourced from www.statswale.gov.wales

The older age groups may be more likely to present themselves to GP surgeries or GP's maybe more likely to offer stool sample tests to older generations. Differences in food preparation within the older age groups may also explain these differences. 10-19 year olds had the lowest rate of infection (53.5), it is likely that this group does not have the frequency of exposure to those common factors that contribute to Campylobacter infection, particularly handling and preparing raw chicken.

The rate of infection by age in SRS is comparable to that of the whole of Wales (Figure 7). The general trend is similar with lowest rates in children, a spike in the rate amongst 20-29 year olds and a gradual increase in rate as age increases. The highest rate of infection in Wales is seen in the 60-69 age group, whereas in SRS age 70+ is the group with the highest rate of infection. Over the age of approximately 40, the rate of infection in SRS is higher than that of Wales.

Figure 7: A comparison between rates of infection

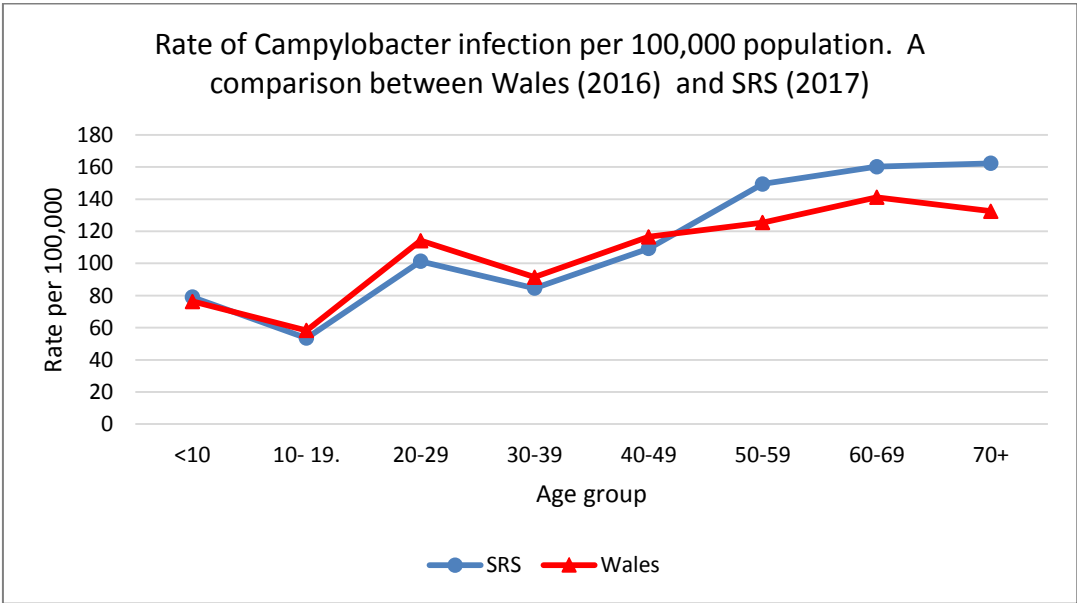
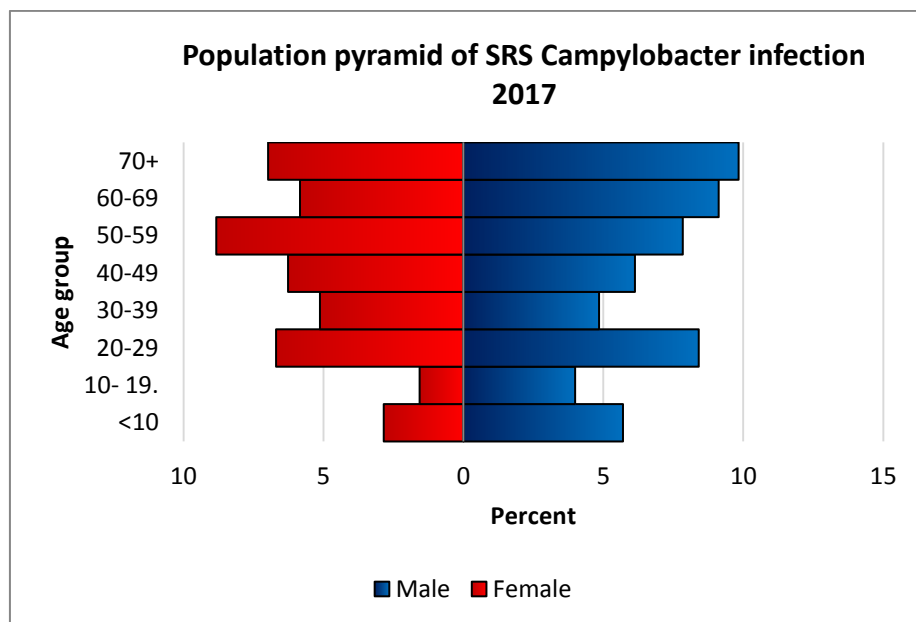


Figure 8 shows the difference in rates of infection by age when comparing both genders. More males were infected in the younger and older age groups and more females were infected with Campylobacter in the 30-39, 40-49 and 50-59 age groups. Possible reasons for this could include more involvement in raw meat/food preparation compared to their male counterparts.

Figure 8 Population pyramid of Campylobacter cases by age group and gender in SRS, 2017



Employment

Employment/education status was obtained for 685 (98%) cases. Of these:

- 347 (51%) were in employment,
- 172 (25%) were retired,
- 60 (9%) were unemployed,
- 42 (6%) were in school,
- 37 (5%) were babies or children too young to attend school and who did not go to nursery,
- 18 (3%) were students and
- 9 (1%) were children in preschool or nursery.

Of those in employment, 61 (18%) were in 'high risk' professions, this included 28 (8%) food handlers and 33 (10%) clinical or social staff with direct contact with susceptible patients.

Type of residence and water supply

573 cases provided information on their type of residence, 554 (96.7%) lived in single family households, 14 (2.4%) in houses of multiple occupancy (HMO), 4 (0.7%) in institutions and 1 (0.2%) lived in a supported living environment.

Out of the 500 cases that gave details of their water supply, 483 (99%) were on the mains, supplied by Welsh Water and 6 (1%) were on a private water supply.

Post code areas

Postal code area CF14 saw the highest number of reported cases (Figure 9). This covers the northwest area of Cardiff, which includes Whitchurch, Llanishen, Gabalfa, Rhiwbina and Llandaff North. The postal code area with the least number of Campylobacter cases and also the lowest rate of infection was CF61, Llantwit Major, St. Donats and Marcross in the Vale of Glamorgan, a much smaller area geographically. However, the highest rate of infection (2.1 per 1,000 population) was observed in CF64 (Penarth, Sully and Dinas Powys in the Vale of Glamorgan), (Figure 10).

Figure 9: Campylobacter cases by post code.

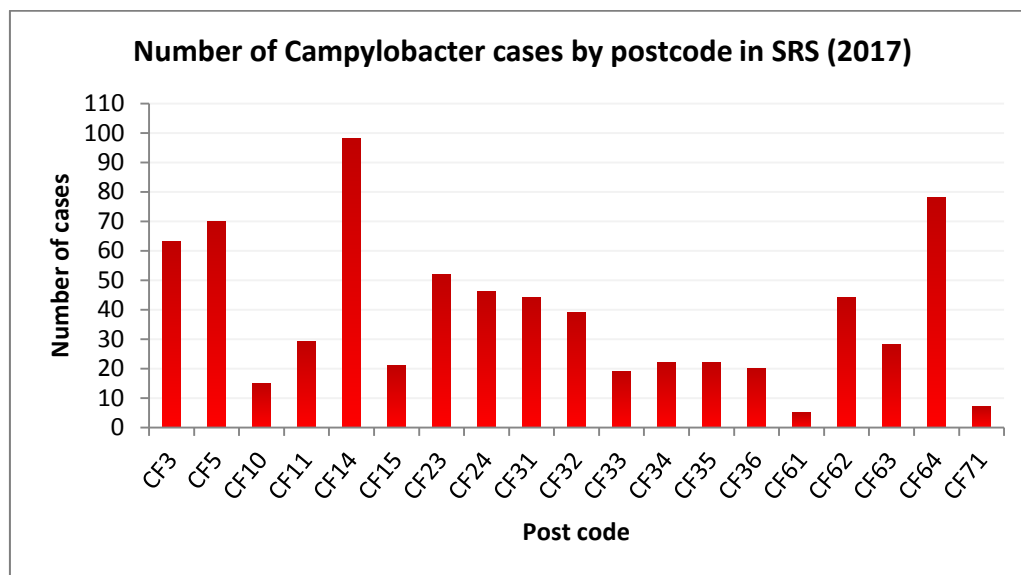
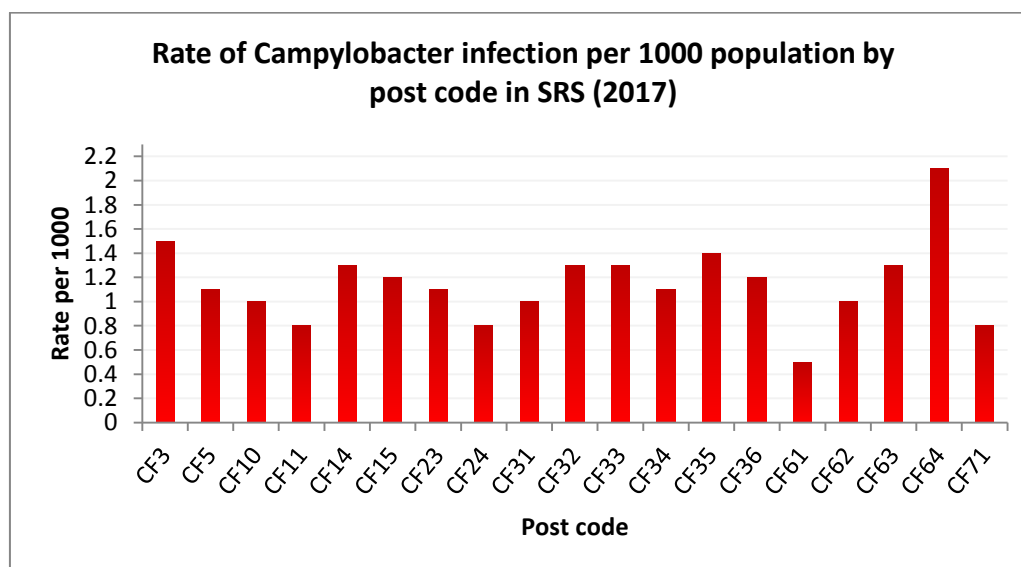


Figure 10: The rate of infection per 1000 population by post code area.



Source: 2011 census postal code population statistics (most recent statistics available)

CF61 and CF64 are comparable areas in terms of geography, social class, age and ethnic background and therefore the difference in infection rate cannot be easily explained (Data source: plumplot.co.uk and postcode area.co.uk-who source their data from ONS).

Risk Factors

Travel

Travel information was obtained from 700 cases, 109 (16%) had travelled abroad during their incubation period, of these 28 (26%) had been abroad for the whole of their incubation period

- 86 (79%) had travelled to Europe (common destinations being Spain and France),
- 17 (16%) of people had travelled to Asia,
- 8 (7%) had travelled to Africa,
- 3 (3%) had travelled to North America.

NB. Some cases had travelled to more than one country within their incubation period.

As well as foreign travel, cases were also asked about domestic travel, 75/700 (11%) had travelled with an overnight stay within the UK during their incubation period.

Animal contact

691 cases provided information on animal contact, 348 (50%) reported that they had animal contact during their incubation period.

Of the 348 who reported animal contact:

- 330 (95%) had contact with pets
- 19 (5%) had contact with animals whilst doing leisure activities such as visiting farms, parks or zoos
- 2 (1%) had contact with animals at work

Many cases had contact with more than one type of animal. The most common animals that cases had contact with were dogs and cats (69% and 30% respectively). Other animals included rabbits (3%), chickens (3%), guinea pigs (2%), horses (1%), hamsters (1%), snakes and lizards (1%), tortoise/terrapins (1%), fish (1%), birds such as budgies, parrots and pigeons (1%) and ducks (0.3%)

According to the PFMA pet population figures for 2017, 44% of households own a pet in the UK. 24% of households own a dog, 17% own a cat, 2% own rabbits and 1% own domestic fowl. Although the questions asked regarding animal contact were not specifically about animal ownership, the figures were comparable to those for household pet ownership. For total campylobacter cases, 35% had contact with a dog, 15% had contact with a cat, 1% with a rabbit and 2% with domestic fowl.

Contact with faeces

170 out of 686 (25%) cases reported that they had faecal contact during their incubation period. Of these:

- 104 (61%) had been cleaning up after pets,
- 28 (16%) had been changing nappies,
- 7 (4%) had been unblocking toilets,
- 3 (2%) had cleaned bird feeding tables,
- 1 (0.6%) had used a pressure washer,
- 1 (0.6%) had used garden manure and
- 36 (21%) reported other activities (removing faeces off shoes, cleaning up after animals in work, personal care for others, mucking out stables, cleaning motorbike and washing eggs with chicken faeces on them).

Water activities (non-swimming pool)

Cases were asked about any water activities (other than swimming pools) and included activities involving lakes, rivers and the sea. 689 cases answered these questions. Of these, 52 (8%) reported that they had undertaken water activities and of these, 25 (48%) reported activities involving the sea, 14 (27%) involving a lake or river, 1 (2%) a paddling pool and 9 (17%) mentioned other activities (reservoir and cooling towers at work, garden ponds/water features and gorge walking).

Outdoor activities

689 cases provided information about outdoors activities, 156 (23%) reported that they had participated in such activities and of these cases:

- 59 (38%) had been walking or running on soil/muddy areas,
- 55 (35%) had been gardening or tending an allotment,
- 24 (15%) had participated in field sports
- 7 (4%) had been cycling, and
- 16 (10%) had done other activities (absailing, assault course, cleaning out drains/cess pit, fungi foraging, motor biking in the woods and on a work site).

Household contacts

558/588 (95%) cases reported that they had not come into contact with anyone suffering from diarrhoea during their incubation period, 26 (4%) reported that their household contacts had been ill with diarrhoea, and 4 (1%) were unsure.

Food

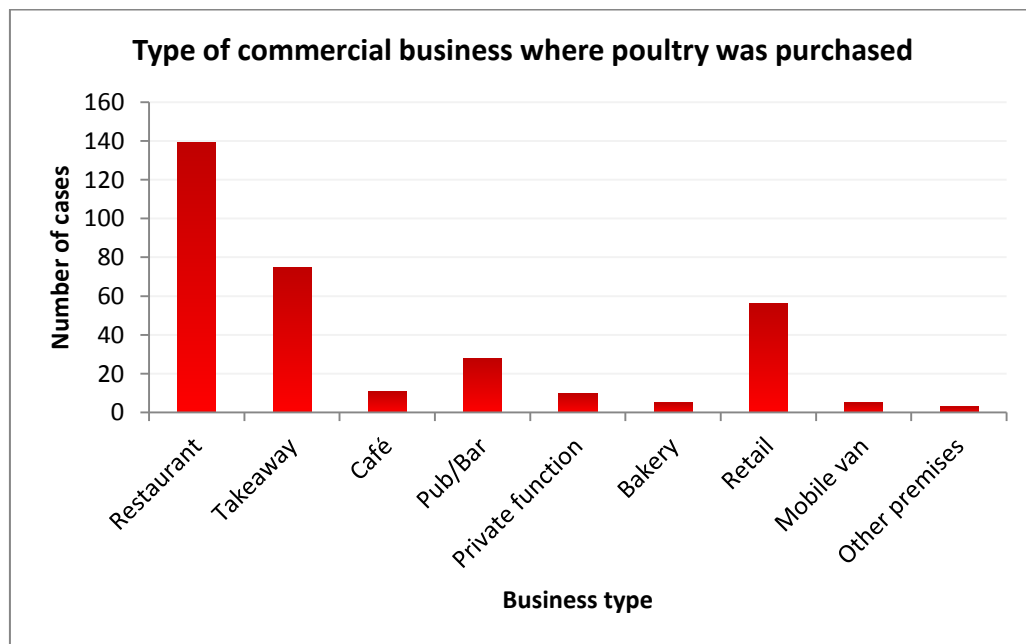
Cases were asked to recall their food history during their incubation period this included questions on chicken preparation and consumption. 8/690 (1%) cases were vegetarian. This included 3 babies who were on a milk only diet due to their young age.

Poultry

Commercially prepared poultry

675 cases were able to answer with certainty, the question regarding the consumption of commercially prepared poultry. 308 (46%) had eaten poultry prepared outside the home and some reported eating poultry from more than one commercial food business. Figure 11 details the type of premises where cases had consumed poultry. The 3 most common premises types were restaurant (139 cases, 45%), takeaway (75 cases, 24%) and retail (56 cases, 18%). 'Other' premises included a community centre, a nursery and a school.

Figure 11: Type of commercial food business



Poultry prepared at home

651 cases were able to give a definite answer to whether they had eaten poultry at home. Of these 445 (68%) said that they had done so and 36/481 (7%) had eaten poultry at another person's house.

As poultry is one of the main risk factors associated with Campylobacter, cases were asked about their poultry preparation methods within the home:

- 351/657 (53%) cases had purchased poultry

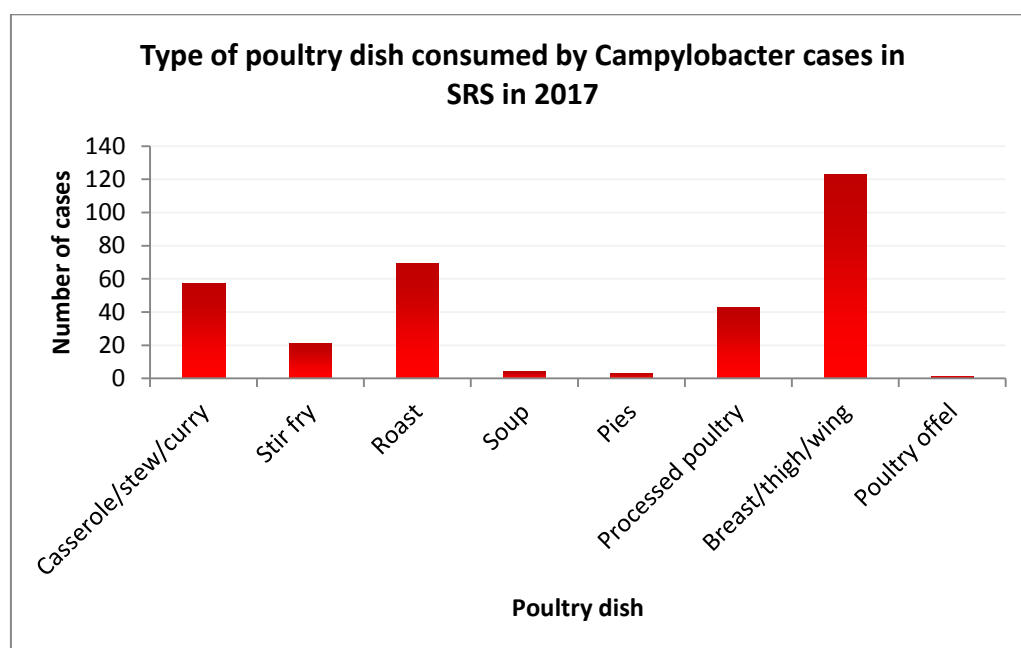
- 285/649 (44%) had prepared fresh poultry and
- 80/638 (12%) had prepared frozen poultry at home.
- Some cases had prepared fresh and frozen poultry.
- In total 313 cases had prepared poultry within the home.

Of those that had prepared poultry at home:

- 102 (33%) had washed poultry,
- 5 (2%) had dried poultry with non disposable cloths,
- 148 (47%) had rinsed the poultry packaging and
- 65 (33%) had not used separate boards for cutting raw and cooked foods.

Some of the cases were able to report what poultry dishes they had consumed and how the poultry was cooked (Figure 12). Dishes involving poultry portions such as breast, thigh and wings were the most common type consumed followed by roast chicken, stews, casseroles and curries

Figure 12: Type of poultry dish consumed.



The oven was the most common method used to cook poultry, 101 cases reported cooking this way. The hob (28 cases) and BBQ (26 cases) were the next most common methods. Other cooking methods included grill, slow cooker, microwave and deep fry.

Salad and Fruit

393/634 (62%) cases reported eating salad during their incubation period and of these, 115/134 (86%) reported that their salad was washed and 143/360 (40%) reported eating

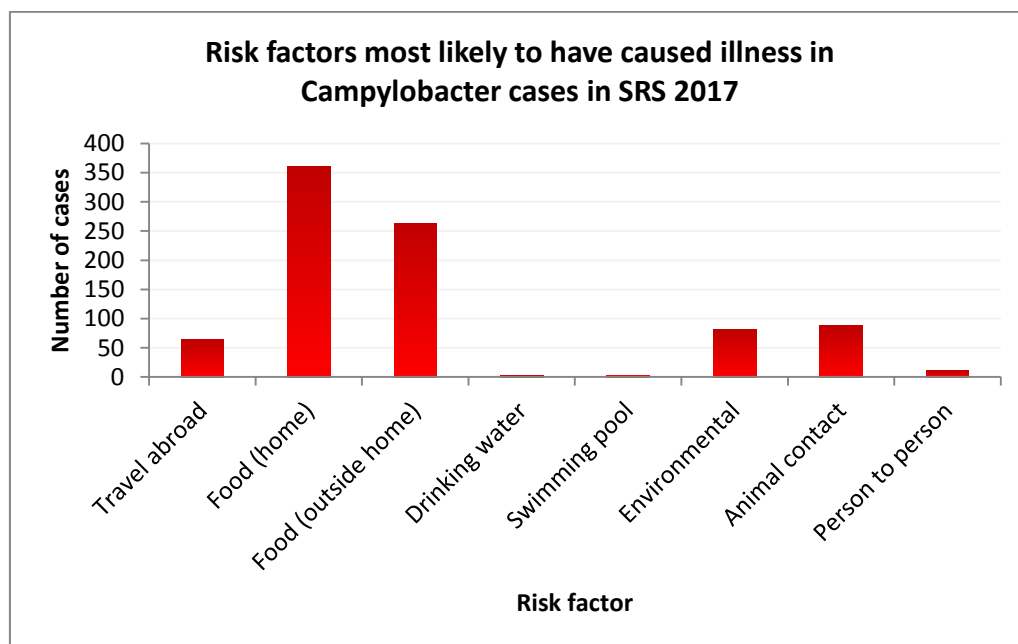
prepacked salads. The most common salad items consumed were tomatoes, lettuce and cucumber.

457/617 (74%) cases reported consuming fruit within their incubation period and 104/140 (74%) had washed their fruit before eating. The most common fruits were apples, bananas, berries and grapes (170 cases gave details of the type of fruit eaten). Discussions with interviewers suggest respondent bias associated with the question on washing fruit and salad.

Most relevant exposures

Based on the information gathered during the interview, the questionnaire requires that the interviewer must indicate the most likely source of infection for that case based on the information presented during the interview. Interviewers tick one or more boxes to indicate the most likely risk factor(s) (data from the 28 cases that had been abroad for the whole of their incubation period was removed).

Figure 12: The most likely risk factors associated with Campylobacter cases residing in the UK for all or part of their incubation period.



This study confirms that the reporting of cases and the methods used for case investigation are robust and work well. However two types of bias should be considered: recall bias during interview as some cases had little recollection of food history and places they may have visited in their incubation period and in some interviews questions were answered on the case's behalf by another family member. Respondent bias is also likely to be associated with the question regarding washing of fruit and salad.

Conclusion

This report reviews the characteristics and risk factors associated with Campylobacter infection in Bridgend, Cardiff and the Vale of Glamorgan from 1st January to 31st December 2017. 741 cases met the case definition of which 702 were interviewed, a notable response rate of 95%.

Food was identified as the main risk factor associated with the Campylobacter infection in SRS in 2017 and food in the home was more prevalent than food consumed outside the home (commercial food businesses). The role of fruit and salad in the incidence of infection remains unknown, although a number of reported outbreaks have identified salad as a risk factor. Exposure to environmental factors did not appear to contribute to a significant level of infection and possible person to person spread was considered very low. The key findings are summarised below:

Clinical features

- Campylobacter jejuni was the most common strain of Campylobacter isolated from cases (89%).
- The predominant symptom was reported as Diarrhoea, followed by abdominal pain, fever and nausea.
- Duration of illness ranged from 1-97 days (mean 9, median 7, mode 6).

Demographic characteristics

- The highest incidence of infection was observed in late spring/early summer with a peak in June, this reflects with the national trend in Campylobacter infection in the UK.
- Rate of infection for SRS was comparable with that of Wales (SRS 117 per 100,000, Wales 116 per 100,000 population)
- There were more males than females infected (391 males, 310 females)
- More females were infected in the age groups between 30 and 59. More males were infected in the age groups below 30 and above 59.
- Campylobacter infected people of all ages but the most common age group was the 70 years plus, closely followed by the 50-59 age group.
- The age group least infected was the 10-19 year olds.
- The rate of infection per 100,000 population by age group in SRS follows the same trend as that of Wales. The age groups higher than 50 do have a higher rate of infection in SRS than that of Wales.
- The post code area with the highest number of reported cases was CF14
- The post code with the lowest number of reported cases was C61.
- CF64 had the highest rate of infection of 2.1 per 1000 population, CF61 had the lowest at 0.5.
- Half (51%) of those infected were employed, a quarter (25%) were retired
- Almost all cases resided in single family households (97%).
- Almost all cases lived in a property on the mains water supply (99%).

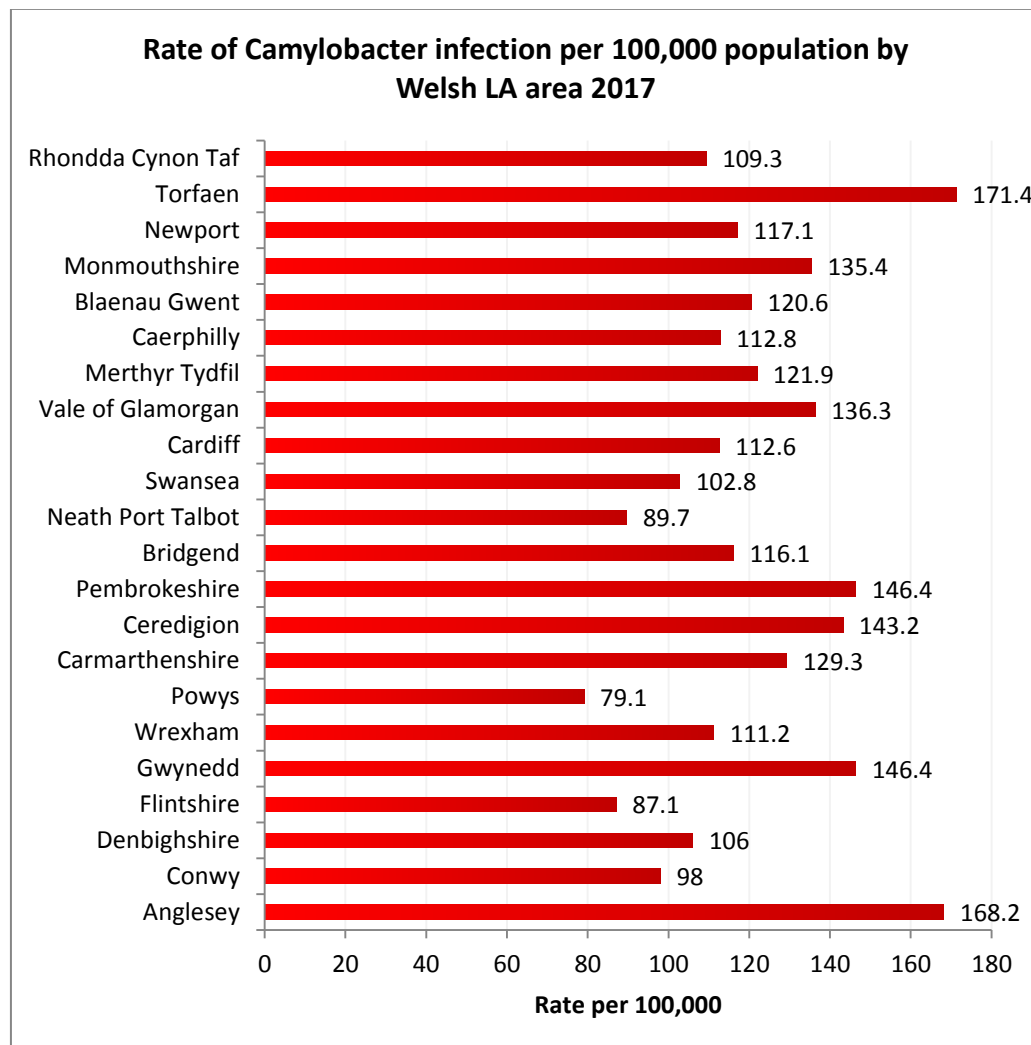
Risk factors

- Food appeared to be the most relevant exposure which had caused illness, with food consumed within the home being associated with more illness than food consumed from a commercial food business.
- Of those that had prepared poultry at home, a third (33%) of cases were washing their raw poultry and almost half (47%) were washing the raw meat packaging before putting in the bin. A third (33%) were not using separate chopping boards for raw and cooked foods.
- Travel abroad could have accounted for 109 cases of illness, however only 28 of these were abroad for their whole incubation period.
- Half (50%) of cases had animal contact, which is only slightly higher than the PFMA figures for household pet ownership in the UK.
- Environmental risk factors including non chlorinated water and outdoor activities was thought to account for some cases. Only 52 (8%) of cases undertook water activities involving non chlorinated water.
- Person to person transmission was very low with only 26 (4%) cases reporting being in contact with someone else who was ill with diarrhoea in their incubation period.
- Faecal contact was reported by 170 cases (25%), with the majority of this being cleaning up after pets.

This study underlines the importance of thorough investigation and provides evidence for targeted public health education of risks associated with the handling, preparation and cooking of poultry both in the home and commercial setting. It also suggests the need for further investigation into the significance of salad consumption as a contributory factor to *Campylobacter* infection.

Appendix 1

Rate of infection for all Local Authorities in Wales 2017 –source Public Health Wales tableau data.



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